THE BRISTOL

Medico-Chirurgical Journal.

SEPTEMBER, 1885.

ENLARGEMENT OF THE SPLEEN.

BY

E. Long Fox, M.D., F.R.C.P.,

Consulting Physician to the Bristol Royal Infirmary.

It is no part of the present paper to deal with all the functions of the Spleen. That it may be removed without materially causing ill effects to the animal, is no proof that it is an useless gland. Such a fact is only an illustration of Nature's prevision, by which some other structure is arranged to supply the lapsed duties of a lost or injured organ. Let it be said, briefly, that although the medulla of the bones is the chief seat for the formation of the red corpuscles of the blood, yet this duty falls also, in smaller measure, to the share of the spleen; that the spleen is largely concerned in the breaking up of the red corpuscles, in which process hæmoglobulin is set free; that one of the derivatives of this free hæmoglobulin is hæmatoidine, which probably, under the name of bilirubin, supplies bile pigment; that the spleen's pulp, besides containing a

special proteid associated with iron, is rich in several peculiar carbonaceous pigments; that although the formation of the white cells of the blood seems to be mainly the duty of the lymphatic glands proper, yet the spleen shares in this function.

It is not proven that any of these functions of the spleen go on actively when the organ is of normal size, and when the circulation in it simply follows the ordinary course of the vessels. It seems necessary for full functional activity that the meshes of the organ should be filled with blood from the vessels that open into its network; but this normal enlargement of the spleen occurs, probably, several times a day, and functional activity, therefore, is in no danger of falling into abeyance. Such a diurnal erethism seems to be active rather than passive, and may be induced by the irritation of vasodilator fibres in the solar plexus, or of fibres that have their origin in the medulla oblongata. Few, if any, of the abnormal enlargements of the spleen are due to an active erethism. An enlarged spleen may mean one in which there is simply great congestion of the organ; or, on the other hand, one in which there is much interstitial thickening. It may be an open question whether the latter form ever occurs without having been preceded by the former.

It will be seen that in almost all cases splenic dilatation is due to a paresis of vasoconstrictor nerves. Whether this be so when the spleen is doing little more than acting as a diverticulun, in cases of hepatic incompetence, may be doubtful. The enlargement is at first, at least, merely mechanical; but even here the secondary effects of vascular pressure will induce a vasomotor paresis. In taking cases almost haphazard from *post-mortem* records, personal observation would simply verify

that of the profession at large. Thus, a spleen of large size was found coincident with hydatids of the liver; with a liver indurated from amyloid disease; with cirrhosis of the liver; with disease of heart, and liver of stony hardness as its consequence; with hepatic anæmia in general tuberculosis, in which the spleen, though not tuberculous, was especially large and firm; with fatty liver coincident with pleurisy and pericarditis; with the liver fatty and very small, in general tuberculosis, when the spleen weighed 1¼lb., but was of soft consistence. These would be only a few instances, out of many, in which the size of the spleen has depended upon the incompetence of the hepatic circulation, if not of the hepatic function.

In tuberculosis, whether the spleen is itself the seat of tubercle or no, the bacilli groups, or the irritation of the degeneration of tubercle, may form the starting-point of reflex action, in which the solar plexus is the centre of the arc, and the splenic fibres the exodic nerves. In some cases of tuberculosis, I have found the spleen three times its usual size; in tuberculous ulceration of the intestines, with the liver healthy, the spleen was large, dark, and soft; in caseation of some of the vertebræ and of the kidneys, the spleen was as large as in severe cases of ague. In many cases this enlargement is associated with a profuse studding of the organ with miliary tubercle; but the size of the spleen seems in no way to be due to the presence of tubercle in its parenchyma. It is not common to find breaking-down of tubercle in the spleen; but one such case is recorded in an early note-book, where the spleen was the seat of very numerous minute tuberculous abscesses, more or less encysted. This specimen apparently resembled some described by Dr. Moxon, as to the explanation of which he throws out the

suggestion that the little abscesses might have had an hydatid origin.

It is probably only in cases of tuberculosis, in which this reflex enlargement of the spleen occurs, that Dr. Gueneau de Massy's dictum holds good, that pigmentation in the face in phthisis is a sign of tuberculous ulceration of the intestines. This ulceration is frequently met with without any pigmentation of the face. The coincidence of the lesion with the physical sign is by way of irritation from the ulcer carried to the solar plexus, and reflected down upon the vasomotors of the spleen, causing dilatation of vessels, and hæmorrhagic distension of its meshes; and thus is brought about a necessarily preliminary condition for the setting free of pigment.

It may be a doubtful point whether, in fever, the microbe, the condition of blood engendered by it, or, in the case of typhoid, the intestinal ulceration, is the starting-point of a similar irritation of the solar plexus and semilunar ganglion, that results in dilatation of the splenic vessels and enlargement of the spleen. I have seen the spleen a foot long in maculated typhus. In a case of septicæmia following the bite of a rat, and in which the symptoms for some time closely simulated typhoid, the spleen could be marked out by palpation, and was greatly enlarged. In neither of these two latter morbid conditions should we be likely to have any intestinal ulceration. The probability, therefore, is, that in typhoid itself it is not the ulceration that is the starting-point, but rather the condition of the blood itself. It is, of course, a matter of daily experience to find this enlargement of the spleen in typhoid patients in life: it would be an exception not to find it *post-mortem* in those cases that die in the third or fourth week. In some few

cases the liver may be pale and bloodless, but this is not the rule; and note-book records speak of the spleen in typhoid weighing 15 oz., 1 lb., 1 lb. 2 oz.—the organ being long and large, mottled, some parts being darker than others—1 lb. 4 oz., 3½ lb., &c. But in fever the spleen will sometimes far exceed these weights. In fever, especially typhoid and relapsing fever, it is acute swelling of the spleen that is usually met with. The organ is soft, the pulp-cells become swollen and granular, and, Hoffman states, contain red corpuscles in their protoplasm. Although, in these febrile diseases, there are seldom any isolated patches of pigmentation of the cutaneous surface, yet there is a peculiar discolouration of the skin, quite different from mere venosity, and that gives the idea of the subcutaneous vessels being filled with a blood highly charged with pigment.

The spleen, too, is sometimes found enlarged when some portion of the body is the seat of malignant disease. In some cases it may be enlarged, and be itself infiltrated or spotted with cancer. But the presence of this morbid growth in its parenchyma seems to have little to do with its enlargement. Occasionally this condition has seemed to depend on the incompetence of the liver, this latter organ being spoiled by cancerous substance in it. In one case the spleen was found very large, but free from malignant disease, whilst the liver was much affected with it, and the lungs were very unusually pigmented. In another, the liver was highly cancerous; in another, with a spleen large and firm, but otherwise healthy, the liver, uterus, and mesenteric glands were the seat of cancer. Here, again, the condition of blood, consequent on the presence of malignant disease, affects either the solar plexus or more directly the sympathetic nerves of

the spleen; and it is this frequent association of cancer or sarcoma with enlarged spleen that affords some explanation, not only of the peculiar cachectic sallowness, so useful for diagnosis, but of much more marked and isolated pigmentation, or of the rapid increase of congenital pigmental markings, that may be frequently recognised in malignant disease, more especially in melanotic sarcoma.

In a short paper it would be difficult to discuss all the varieties of splenic enlargement. Much might be said of primary splenitis, due mainly to hæmorrhagic infarctions, of which suppuration may be the ultimate consequence; or of secondary splenitis, depending on pyæmic infarctions, which proceed very rapidly to suppuration. The size of the spleen under either of these conditions is extremely variable, but it may occasionally form a tumour that occupies the whole of the left side of the abdominal cavity.

In rachitis, the enlargement of the spleen may be considerable. In a child of two years old, this organ was found nine inches long and four in its greatest breadth. In this condition the spleen will sometimes occupy a large part of the abdominal cavity, and it is then, pathologically, closely allied to the spleen of chronic ague, in which the trabecular stroma and the lymphoid tissue increase pretty equally.

In syphilis, a similar condition may obtain, whether the organ itself is the seat of syphilitic deposit or no. But this enlargement of the spleen is not very common; when it is met with, it is in the tertiary stage of syphilis. In one case I have noted a large organ with thickened capsule, and, on section, several yellowish-white deposits. But Wilks and Moxon state that, under these circumstances, hypertrophic enlargement of the spleen is often met with, and this in bodies quite free from amyloid

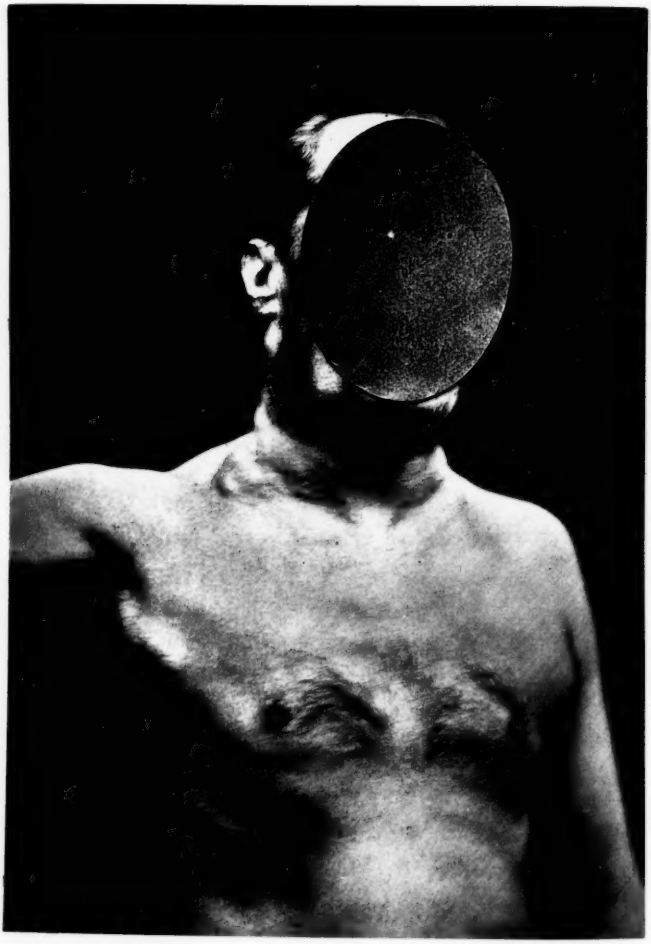
disease. In eight such syphilitic subjects, the average weight of the spleen was 19 oz., whilst there was neither cirrhosis of liver nor lardaceous disease present in them.

In lardaceous disease, the size of the spleen may exceed the normal; it may take the form of sago spleen, the malpighian bodies being filled with this albuminoid material; or the lardaceous degeneration may occur in a diffused form throughout the whole of the spleen, this organ being then large, anæmic, and presenting, on section, the appearance of raw bacon.

Infarctions of the spleen are not confined to splenitis; they are found in several other enlargements of spleen, and are not uncommon in leucocythæmia; they are sometimes embolic, sometimes thrombotic. Dr. Goodhart's explanation of the course of the lesion is as follows: "The ultimate ramifications of the splenic artery are terminal; that is to say, they do not anastomose with each other. If one of them becomes blocked by an embolus, the circulation beyond is entirely arrested, and the blood-vessels, thus deprived of their function, speedily fall into a state of impaired nutrition. After a short time, the vein which drains the affected area, still receiving blood from the collateral branches, allows of a retrograde current, at first, according to Cohnheim, partial but continuous, then rhythmical. Thus the blood, finding its way back into the empty and feeble vessels, becomes extravasated, and an infarction is the result. It is but seldom that any other termination than gradual resolution occurs; but should the plugging be composed of septic or foul material, an abscess may result."

In acute ague, the spleen is large and generally soft: it is not in this stage that the trabeculæ become affected.

In chronic ague, there is often thickening of the capsule, a considerable increase in the fibrous trabeculæ, with thickening of the arterial and venous walls, with proportional augmentation of the lymphoid tissue. The enlargement of the organ may be very great, and is frequently associated with the formation of a large amount of pigment. Whether this is, as Wedl believes, a parenchymatous inflammation or no, and whether its starting point is a direct action of a vegetable organism on the splenic ganglia and tissues, or a consequence of such action of a vegetable organism on the semilunar ganglia or the sympathetic of the spleen, the difficulties in the comprehension of ague remain unanswered. The splenic enlargement may be reduced by treatment; the patient may live for many years outside the influence of malarial poisoning; and yet, whenever such a patient gets out of health in any way, the intermittent symptoms will recur. Do the organisms that induce the symptoms of ague exist everywhere in minute amount, and in healthy districts only exercise their sway upon those persons whose nervous system has been weakened by previous attacks, and on them only when nervous energy is at the lowest ebb? Or do some of these organisms always remain somewhere (perhaps in the spleen) in a patient who has once yielded to the effects of malarial poisoning, ready to increase and multiply at any moment of the depression of nervous force? Either theory is beset with difficulties. The latter theory is held by Dr. Fyffe. He also referred, in his presidential address, to the enormous size attained by the spleen sometimes in this chronic form of ague; and he mentioned a specimen in the Pathological Museum of the Army Medical Department, where the spleen of a boy, aged 14, weighed 10 lb. 15 oz., and measured 14 in.



by $7\frac{3}{4}$ in. The pigmentation of the cutaneous surface and of internal viscera, in chronic ague, is notorious.

The other main examples of enlargement of the spleen associated with distinct abnormal increase of growth of some of the tissues of the organ, are seen in leucocythæmia and in lymph-adenoma. This last morbid state—the adénie of Trousseau—may assume a specially lymphatic or a specially splenic form, but the two are more frequently combined. The hypertrophy of the spleen is a gradual chronic process. It is not extreme. The spleen seldom attains even the ordinary size of the organ in chronic malarial poisoning. It differs also from this, in that its abnormality consists in the increase of its lymphoid elements, and that there is but seldom any marked augmentation of the trabecular substance.

In a case that was under observation for more than four years (and of which a photograph of the external appearance of some of the lymphoid glands is appended), the *post-mortem* record was as follows: Body much emaciated; enlarged glands in the cervical, axillary, and inguinal regions; one prominent gland on the left instep; bronchial glands enlarged, about the size of a haricot bean and upwards. Heart: several old bands of adhesion between the apex of the heart and the pericardium, occupying about a square inch of space; heart pale, flabby, and loaded with fat; mitral and semilunar valves healthy; tricuspid valve had an atheromatous patch, about the size of a split-pea, on the middle cusp. Remains of old pleurisy on the left side, of recent pleurisy on the right. Some emphysema of the upper portion of right lung; the lower lobe hepatised. Liver: some whitish patches, quite superficial, about the size of a shilling, along the anterior margins; otherwise normal. Kidneys

the right, of normal size; the capsule stripped off easily: three large cysts full of fluid, the largest as big as a walnut; very little normal renal structure left; left, of normal size; a few cysts, smaller than those of the right kidney. Spleen: about three times the normal size, rather pale; otherwise, nothing abnormal apparent to the naked eye, except an infarctus of some size in its centre. The enlargement was found to be due to a great increase of the lymphoid elements. The splenic rete was nowhere hyperplasic. The mesenteric and other abdominal glands were much enlarged, and of various sizes. In none of the glands examined—axillary, bronchial, and mesenteric—was there any hyperplasia of the connective tissue, only a great increase in the cell elements. The bronchial glands were extremely pigmented A feature in the case was the very marked diminution in the size of the external glands and of the spleen during the last two weeks of life.

In many cases, however, the spleen does not attain to anything like this size; but even in the smaller spleen, associated with Hodgkin's disease, the lymphoid tissue around and in the immediate neighbourhood of the arteries is moderately increased, and, taking on a somewhat nodulated appearance, gives rise to what has been termed the hard-bake spleen.

I have only once seen an autopsy of the very acute form of Hodgkin's disease. Death ensued from mechanical causes. Not only were the axillary glands exceedingly enlarged, but the bronchial and mediastinal glands rapidly attained such a size as to compress the inferior vena cava, whilst at the same time the return of the blood from the head was materially interfered with by the extreme enlargement of the cervical glands. In this case no abnormality of the spleen could be detected by

palpation. The cavity of the thorax was alone allowed to be examined.

In leucocythæmia the lymphatic glands are frequently enlarged, though their structure varies but little from that of ordinary adenoid tissue in health. The marrow of the bones presents a semi-purulent appearance, from hyperplasia of its lymphoid elements, and the spleen is usually exceedingly enlarged, though still retaining, more or less, the shape of the normal organ. It is common to find traces of adhesions to the surrounding organs, and sometimes some thickening of its capsule. The trabecular tissue is hyperplasic; there are frequently to be found infarctions, more or less considerable in size, from plugging of the splenic vessels with white cells, as in other organs and tissues of the body in this affection. In the early stage there may be enlargement, with a normal consistence, the organ containing a good deal of blood. As the disease becomes more chronic, induration occurs, with greater hyperplasia of the trabeculæ. The enlargement is due to the presence of great numbers of lymphoid cells in the meshes of the retiform tissue. In this form of splenic enlargement there seems to be but seldom any abnormal pigmentation. May not this be explained by the fact that the normal functions of the spleen are prevented by the presence of the large numbers of lymphoid cells?

The theory has been advanced of a connection between the leucocythæmic spleen and exposure to malarial poison. The absence of pigmentation in leucocythæmia militates, to some extent, against this view; but, as a matter of observation, a considerable proportion of patients suffering from leucocythæmia have either been ague-stricken or, at least, have lived in malarial regions. I have met with one rather rapidly fatal case, in which, four years pre-

viously, one of the mammæ had been removed for scirrhus, and, at the time when a return of malignant disease might have been expected, leucocythæmia supervened.

In a case lately seen, where the patient had been ill for a year, the heart was dilated, there was a hæmic bruit, the liver was enlarged, the spleen occupied most of the left half of the abdomen, the proportion of white cells in the blood was much increased, and there was great debility and a very cachectic look.

In another case, with similar symptoms, the spleen, which had been very large, became reduced in size, whilst the increased proportion of the liver persisted. The case was lost sight of before death; but a similar thing had been noticed some years ago in the Bristol Royal Infirmary, and it was found, after death, that the enlarged spleen had become closely united to the walls of the stomach, that ulceration of the latter had taken place, that the grumous softened spleen (not by any means a common condition of leucocythæmia) had, to a great extent, emptied itself, as regards its exaggerated lymphoid elements, into the stomach, and that this softened material had passed per rectum.

In another case—that of a clergyman, in whom the disease lasted little more than a year—the spleen intruded quite into the pelvis, and the proportion of white cells in the blood was very large. Although there could be detected no inflammatory complications, the evening temperature during the last two months of life varied from 2° to 5° Fahr. above the normal standard.

Both during life and in the dead-house, the connection between leucocythæmia and Hodgkin's disease seems to be close; and yet, in the latter, any increased proportion of white cells in the blood is of the faintest kind; whilst

the spleen is far more capable of normal function, and pigmentation (sometimes of the skin, more frequently of some of the internal organs) is more commonly found. Fatty degeneration of the heart is more usual in leucocythæmia than in adénie, and also minute extravasations of blood in the brain, the meninges, and elsewhere.

It is a question whether it is right to speak of the melanæmic enlarged spleen as an entity, separate and distinct from ague. It is met with most usually in severe fevers of a remittent type; but, on the other hand, in melanæmia, not only are the white cells of the blood found in an abnormal proportion, because of the diminution of the red cells, but there is an absolute increase in their number. The spleen, in this disease, is enlarged and indurated, with hyperplasia of the rete; it is crowded with pigment in flakes, in free granules, and in granules contained in the white cells. This pigment is found in most of the other organs in the body, notably in the liver, the lungs, the brain, and the marrow of the bones; but the spleen is not only the most pigmented of any organ, the pigment infiltrating the whole viscus, affecting especially the immediate neighbourhood of the arteries and veins; but it is the only organ decidedly diseased.

It is, at least, plausible to believe that most of the pigment deposited in other organs issues from the disordered spleen, though Planer, Frerichs, and others deny this. The weight of authority, however, is in favour of the splenic theory. Colin considers that the destruction of red cells, and the formation of pigment, in the spleen is caused by a violent congestion of the blood in this organ, but that a similar process goes on in other organs where pigment is found. It seems more in accordance with natural law that the same process should be set in

action in all pigmentation. There is no special congestion of the skin in Addison's disease before the bronzing commences, although some stasis of circulation is a necessary element in the deposit of pigment anywhere.

Pathology and pathological anatomy seem to teach that, whatever be the abnormalities of circulation or of vascular innervation that determine the topical deposit of pigment, the primary causation of its abnormal development lies in a direct or reflex irritation of the solar plexus, transmitted to the sympathetic plexus of the spleen, paralysing or rendering paretic the vasoconstrictors of this organ, determining congestion, and in some instances, as a result of long-continued congestion, a hyperplasia of the stroma and of the splenic pulp, leading to a great destruction of red globules, and a production of a larger amount of pigment than is required for the ordinary colouring of the secretions, especially of the hepatic.

In this relationship the germs of fever, of septicæmia, &c., directly or indirectly affect the spleen; congestion of this organ, resulting from the mechanical effects of incompetent liver, diseased heart, impeded portal circulation, gives rise to a similar functionally-abnormal phenomenon. The bacillus of tubercle, the microbe of syphilis, or the state of blood engendered by them, the cachexia of sarcoma, may, in certain cases, lead to a similar enlargement of the spleen. A vegetable organism may be the starting-point of irritation in ague and in melanæmia; whilst in adénie and in leucocythæmia, the existing cause has not yet been recognised. Irritation of the solar plexus, and consequent paretic dilatation of the splenic vessels, seems to be the factor usually found in the pathological anatomy of pigmentation, and it affords a further example of the economy in natural processes.

A METHOD OF EXPRESSING EAR-POWER IN DEGREES OF A FIXED SCALE.

BY

THE REV. R. A. CHUDLEIGH, M.A.,

Wimborne, Dorset.

SCIENCE becomes exact and trustworthy in proportion as it deals with number, measure and weight. Whatever is vague and ill-defined must be replaced by what is definite and numerical. Prescriptions, for instance, which used to order "a pinch" of one ingredient, "a little" of another, and "a good drop" of a third, are now given in drams and scruples. Visual capacity has for some years been gauged by accurate tests; and if the total visual power be defective, it can be so analysed as to localise the defect either in the horizontal plane, or in the vertical, or in some other direction. But the tests for hearing seem to be still vague and indefinite. A watch is placed on different parts of the head, and the patient informs us that he can hear the ticking "moderately," or "only just," or "fairly well," or "scarcely at all." One would like to reduce these hazy expressions to feet and inches, and represent them in terms of the table called Long Measure. A very simple apparatus, often used as a toy for amusement, suggests a method, not only of representing one's total ear-power numerically, with reference to a fixed standard, but also, in cases of defect, of so separating the total ear-power into its two components (air-conduction and bone-conduction) as to

show approximately what proportion of the defect is due to obstruction in the meatus, and what proportion is due to disorganisation of the labyrinth or degeneration of the eighth nerve. Take a yard and a half of whipcord, or any tight twist. Let a person of normal hearing place his open hands flat on his ears, cupping the hands a little, so as to make over each ear a hollow as nearly as possible air-tight. Tie one end of the cord around the horizontal circumference of the head, including the hands, or (far better) use a slip-knot, and run it up tight to the forehead, so arranging matters that the knot shall rest on the region of the frontal sinus, and the cord shall cross the hands near the distal ends of the metacarpals. Now take the free end of the cord in your left hand and strain it tight from the wearer's forehead, so as to keep it in tension, and with the thumb-nail of your right hand briskly scratch the strained cord, making sudden starts and long draws of the nail alternately. If this be fairly well managed, the result to the wearer of the cord will be a wonderfully good imitation of a thunder-peal, while to a bystander the friction on the cord is almost inaudible.

Having succeeded, in the first place, in making this very simple experiment answer, it will next occur to one to ascertain at how great a distance on a long cord a scratch is discernible. If one's friends be induced to submit to experiment, it soon becomes apparent that to different persons a scratch is audible at very different distances, according to their varying ear-power. Differences of hearing so slight as to have escaped notice will make a difference of ten or fifteen feet on the cord; and before long one gets one's acquaintance distributed, according to their ears, over nearly a hundred yards of whipcord. But the scratch is too loud for a convenient

test, and the length of cord required is unwieldly. The arrangement which I have found most suitable is this: Take fifty feet of whipcord; mark it off into lengths of six inches, which is readily done by winding it on to a card of the proper breadth (not quite six inches), and chalking or otherwise colouring the two edges. The cord, thus divided into a hundred equal parts, is stretched from one end of a long room or passage to a chair at the other end, on which the subject of experiment is to sit. This end must be provided with a loop (over and above the fifty feet), to fit around the head as before. The test-sound is made by striking the cord with a stiff feather, and the operator notes in what six-inch division the sound ceases to be audible to the person in the chair. A very defective ear may cease to discern anything at perhaps the eighth division. Cases of exceptional acuteness may reach beyond the scale altogether, even to the 126th half-foot; but most persons find their limit somewhere between the fortieth and fiftieth foot—that is, between 80 and 100 of the scale; and as the scale is a centigrade, these figures may be conveniently represented in decimal form as ·08 and 1·26 and ·80 or 1·00 respectively.

It is clear that if the full scale of one hundred hundredths (unity) be taken as perfect hearing, and a given subject ceases to hear the test at the seventy-fifth division, that subject may be said to possess seventy-five hundredths, or three-quarters, of perfect ear-power; and I describe that condition by saying that ·75 is the said person's aural co-efficient. This co-efficient I briefly denote by the symbol C.

It follows from the nature of the experiment that C represents the total hearing power through all channels,

whether bone or air. But in cases of defective hearing, it is a great object to ascertain how much of the total capacity is due to air-conduction and how much to bone-conduction. If we call air-conduction A, and bone-conduction B, we may say that A + B = C; and the thing required is to find the ratio of A to B. This can be done approximately, though not absolutely. Returning to the cord, remove the loop from the horizontal circumference and lay it on the sagittal suture (the hair should be parted in the middle for the purpose), stretching it over as much as possible of the dome of the head from glabella to occiput, and ascertain as before the point on the scale at which the test-sound ceases to be heard. The distance, which will be much less than when the cord is in the other position, may be fairly taken as a measure of the power of hearing through bone-conduction alone, consequently all that remains (of C) must be due to air-conduction; and, of course, the value of A can be readily found by subtracting B from C, and then A, B and C will be known quantities. But, as before stated, our knowledge of A and B is approximate, not absolute; for it must not be assumed that the bone-conduction in the second experiment is equal to, or identical with, that which formed part of C in the first experiment, because the bones involved in the two cases are very different. It *is*, however, assumed that the one stands to the other in an approximately fixed ratio; so that when we subtract B from C, though we may not subtract the precise quantity of C which is due to bone-conduction, yet we do subtract a quantity which bears to the true quantity a fairly constant proportion.

I will conclude with two concrete examples of how this ear-gauge may be used. Having satisfied oneself by

trial on a sufficient number of persons that total ear-power (C) normally equals 1·00, and that hearing per bone alone (B) normally equals, say, ·45, and that therefore hearing per air alone (A) normally equals ·55, we will find the value of A, B and C for the first of our two patients. C is found to be ·72. It is much below normal, and the question is, Where is the defect? B turns out to be ·43, only two degrees below perfection. We at once decide that the auditory nerve is probably sound, but that there is an obstruction somewhere in the *approaches;* it may be that the meatus wants syringing, or a cold has temporarily thickened the walls of the eustachian tube or tympanum. But in the second patient, though we find that the value of C is again ·72, yet B, instead of being nearly normal, proves to be only ·32; whence we conclude that the approaches may be clean and clear enough, but that there is a defect in the eighth nerve or its immediate labyrinthine connections.

Clinical Records.

FIVE CASES ILLUSTRATING THE ACTION OF INTRA-PULMONARY INJECTIONS.

By R. SHINGLETON SMITH, M.D. (Lond.), B.Sc., F.R.C.P.; Physician to the Bristol Royal Infirmary.

THE following five cases are the only ones in which I have carried out the practice of injecting a solution of iodoform into the substance of consolidated or disintegrating lung. The injections have been performed after the manner practised by Pepper, of Pennsylvania, and advocated by Beverley Robinson, of New York, in the *New York Medical Record* for January 10th, 1885. An ordinary hypodermic syringe has been the instrument employed, and the fluid used has been, in all the cases except one, an ethereal solution of iodoform, five minims containing one grain. The quantity injected has been five to ten minims, and the injections have been repeated daily or at longer intervals.

The injections have been given forty-two times in five independent cases. On the first four occasions the iodoform was dissolved in olive oil; but, in order to avoid any little risk of fat embolism which might arise from the injection of oil into a large blood-vessel, the solution in ether was afterwards employed.

I have been unwilling to use any other substance for

injection. The bichloride of mercury, although a more powerful germicide, is so irritating when injected subcutaneously, that its use is not likely to be devoid of danger when injected into the lung texture. Treatment by iodoform has already given encouraging results in the hands of Dreschfeld and others. In a series of cases published in the *Transactions of the International Medical Congress*, of 1884, I found that 29 of the 46 cases showed an absolute gain in body weight, amounting in one case to 32 pounds in 99 days, in another case to 33 pounds in 110 days; of the remaining 17 cases the loss of weight was small, and in many of them the wasting, which had previously been rapid, was more or less completely arrested. It may fairly be expected that if the drug can be brought into contact with the diseased tissue in a more concentrated form than when diffused throughout the blood, more decided results may yet be gained than have hitherto been possible from the administration by mouth. It has been estimated by Sternberg that the quantity of iodine required to prevent the development of a septic micrococcus in the blood of an adult man would be thirty-five grains. Now I have in one case administered thirty grains of iodoform daily, and no toxic symptoms were witnessed till after one month's continuous administration. It follows that, inasmuch as iodoform contains 96 per cent. of nascent iodine, the amount given approaches that which Sternberg's estimate shows to be necessary for complete disinfection of the blood. Treatment by injection into the focus of the disease in the lung appears to give us a means by which local developments may be reached by local treatment; and so complete local disinfection may be obtained, and the risk from the toxic action of the drug on the nerve centres

may be avoided. It remains to be seen whether actual experience of the method will justify the expectations which theoretical considerations afford.

The first case is one of gangrene of the lung:

Simon T., 44, single, labourer in market garden. Had been out of work for six weeks, and suffering from exposure and want of food; in the habit of taking beer freely. Previous good health, with the exception of a dry cough for several winters. Was admitted to the Bristol Royal Infirmary on January 21st, 1885, complaining of shortness of breath and cough, but had been walking about till the day of admission.

Pres. Cond.—A well-nourished, prematurely aged man, cyanosed, breathing rapidly, with frequent short hacking cough. Expectoration frothy, blood-stained, and very fœtid. Chest barrel-shaped, with little movement, and very resonant percussion note; crepitation at both bases. Heart sounds weak; no murmur. Urine normal. No œdema of legs.

Ordered mist. cinchonæ, ammoniæ, c. ethere, quartis horis.

On 23rd, fœtor of breath very decided. Ordered creosote inhalations, and iodoform gr. ij, in pill, every four hours.

30th.—Patient very prostrate; marked hectic; expectoration profuse; fœtor constant, intensified on coughing; marked dulness on percussion below angle of left scapula; bronchial breathing, bronchophony, and coarse crepitation. Solution of iodoform in oil injected into the substance of the lung in the centre of the dull area at the left base; fifteen minims of olive oil, containing about one grain of iodoform, were injected with the hypodermic syringe. The injection appeared to have no immediate

effect on the patient; it did not give rise to coughing, and there was no appearance of pain or other discomfort.

Feb. 1st.—Expectoration amounts to over a pint daily, and fœtor continues. Dulness at left base increasing; amphoric breath sounds and bronchophony, with much coarse crepitation. Injection repeated daily; it gave rise to no coughing or pain, and there was no hæmoptysis. On one occasion patient stated that he noticed the taste of the medicine in his mouth some hours after the injection. Was ordered one grain of quinine every four hours, and to continue the iodoform pill; brandy, 6 ounces.

Feb. 2nd.—Pulse very weak and small; great prostration. Some dulness and crepitation at the right base.

3rd.—Pulse better; patient less cyanosed. No dulness at the right base, but abundant coarse crepitation. Loud bronchial breathing at left base more extensive. Sputum examined for bacilli and for lung tissue; putrefactive bacteria abundant, but no tuberculous bacilli and no elastic tissue found. Solution of iodoform in ether was injected into the left lower lobe, ten minims containing two grains. Slight cough ensued immediately.

Feb. 6th.—Ethereal injections had been continued daily; patient made no complaint respecting them. He appears much improved, thinks he is better, sits up in bed, feeds himself, and looks brighter. The fœtor of breath is much diminished; now only perceived on deep coughing; does not pervade the air around. Cough is less harassing, and expectoration less in quantity. At left base bronchial breathing from angle of scapula downwards, and from spine to posterior axillary line. Percus-

sion note close to spine high pitched, amphoric. Coarse gurgling on coughing. Bronchophony. At right base coarse crepitation, but no dulness. Vocal fremitus at left base diminished.

10th.—Injections continued daily. Patient improving in strength, sleeps better, has less cough, and expectorates about half a pint of frothy yellow muco-pus, slightly fœtid. Still has characteristic fœtor on deep coughing. Urine contains a trace of iodine.

13th.—Some complaint of giddiness, and therefore the iodoform pill was discontinued.

15th.—Patient looks brighter, is more active mentally, and seems stronger; takes food fairly. P., 124. Sputum a little fœtid; a few streaks of blood after the injection.

16th.—Seems weaker, more flushed. Ordered quinine, two grains, every four hours, and the iodoform injection was discontinued.

17th.—Slight delirium in the night. The fœtor a little increased on coughing.

18th.—Fœtor much increased.

19th.—More dyspnœa. Patient is very prostrate; face blue. Pulse, 130; resp., 46. Death took place in the evening.

Post-mortem.—Marked emphysema of both lungs. Left lower lobe firmly adherent and consolidated; tissue brittle, tearing on removal, and disclosing a cavity in posterior part near to the spine; the lung axis about three inches, and about two inches transversely, traversed by ribs of firm tissue, lined by a pseudo-mucous membrane; lung tissue around the cavity in state of grey hepatisation and friable; upper part of left lower lobe soft and œdematous, pitting on pressure; no fluid or slough in cavity, and no

trace of the injected iodoform either in or around it. Right lower lobe congested and œdematous.

Spleen.—Numerous minute emboli dotted over the surface, looking like tubercles, but found to be triangular, with base on the surface.

Heart, kidneys, liver, normal.

In this case injections were given seventeen times at various parts of the lower lobe of the left lung into the consolidated and disintegrating area: four of these were solutions in oil, the remaining thirteen in ether. The effect was apparently beneficial, inasmuch as the temperature fell to normal, the expectoration diminished in quantity to about one-half and became much less offensive to the patient and his neighbours, and there was less cough.

The injections were discontinued in consequence of increasing weakness, which it was thought might be toxic. On the second day afterwards the fœtor of the breath had much increased, and so had the dyspnœa and prostration.

The diminution of the fœtor may fairly be attributed to the injections. The patient was at first a great annoyance to his neighbours, and became so again after the discontinuance of the injections.

The next case was one of chronic pneumonia:

William S. D., æt. 40, of good family history, but of intemperate habits, came under observation in December, 1884, and gave an account of failing health since the previous January. There had been two attacks of blood spitting, and profuse expectoration amounting to half a pint or more of pure pus daily, which did not contain tubercle bacilli or lung tissue. There was flattening at the right apex and contraction at the right base; the left supra-spinous fossa was dull on percussion, and there was

coarse bubbling crepitation at both bases. Liver dulness was normal. There was no albumen. Pulse, 96; small and weak. On January 23rd, 1885, a large patch of dulness and cavernous sounds were found at the base of the right lung: there was also coarse crepitation over the left lower lobe: the sputum amounted to one pint daily of pure pus, with no tubercle bacilli. The cavity in the right lower lobe was aspirated by Mr. Greig Smith; and on January 25th a drainage tube was introduced, but without giving exit to more than a few drops of pus, although air passed in and out freely. The tube was removed after four days, and the wound closed quickly.

Feb. 4th.—An ethereal solution of iodoform (gr. ij. in ℥ x.) was injected into the cavity through a hypodermic needle. The injection immediately set up violent coughing, and the patient tasted the ether, but the sputum did not become blood-tinged.

Feb. 19th.—Injections had been repeated five times in fifteen days. The taste of the ether had been again mentioned, but little cough was usually excited. On two occasions there had been momentary faintness immediately after injection. The sputum had diminished to half a pint, and no toxic symptoms were observed. The patient felt better, and went away to the seaside; the injections were therefore discontinued. They did not, however, effect any permanent improvement. The patient was of opinion that they diminished the expectoration, but this was only for a time: the process of disintegration of lung steadily progressed, and ultimately there were the usual signs of cavities on both sides, from the spine of the scapula on the right side and the angle of scapula on the left side downwards to the bases of the lungs. There was, however, no evidence of disease at

either apex: at both infra-clavicular regions the breathing was puerile, and at no time were there moist sounds over the upper lobes in front. The sputum was examined on numerous occasions, but neither tubercle bacilli nor shreds of lung tissue could be found. There was usually a little fœtor, but not that of gangrene.

This patient died in June, whilst away from home, and I did not learn the details of his later history, but regret that the doubt as to the nature of his disease was not cleared up by *post-mortem* investigation.

The third case was one of chronic tubercular pleurisy. Nine injections were given into the dull area at the base of the right lung on nine successive days. The injections gave rise to no pain or cough, and there was no hæmoptysis. There was steady gain in weight whilst under treatment, the temperature became normal, cough and expectoration ceased, the dulness of right lung had much diminished, and the patient considered herself to be quite well.

Nellie S., 22, single, dressmaker. Admitted to Ward II., January 20th, 1885, for vomiting after food. Healthy till three months ago, when she was laid up with right pleurisy: has had cough ever since, and has been losing flesh steadily. Three days before admission vomiting commenced, and had continued daily. Catamenia had been regular. There had been no hæmoptysis. No history of consumption in the family; father and mother both living.

Dulness, crepitation, feeble breath sounds at right base from fifth dorsal vertebra downwards; breathing of bronchial character in axillary and scapular regions; diminished vocal fremitus below angle of scapula; dulness at right supraspinous and right infra-clavicular regions.

Heart sounds good. Temp. 101°. Urine, sp. gr. 1030; no albumen.

Jan. 28th.—Sickness subsiding. Patient can take milk freely. Patient has a cough, and expectorates a little muco-pus, which contains numerous tubercle bacilli. Temperature varies from 101° to 99°. Weight, 8st. 2lb. To take iodoform and quinine, of each one grain, every four hours. Right base continues dull, with faint breath sounds and diminished fremitus.

Feb. 4th.—Sickness has ceased. Patient is gaining weight, 12 pounds in seven days; now 9 stone. Temp. varies from 98·4° to 100°.

Feb. 6th.—Dulness at right base as before; crepitation at right supraspinous fossa; breath sounds weak over whole of right lung. To take two grains of iodoform, in pill, every four hours. Hypodermic needle disclosed the presence of clear serous fluid in the right pleura: the aspirator needle was introduced at the posterior axillary line in eighth intercostal space, but only a few drops of bloody fluid escaped.

Feb. 11th.—Weight, 9st. 2lb.

" 13th.—To have iodoform, gr. iij., every four hours.

" 17th.—Dulness at right base less decided. Little cough and expectoration. Patient not complaining of sickness or diarrhœa; less sweating at night. Temp. still rises at night to 100° or 101°. Iodoform, gr. j., dissolved in five minims of ether, was injected with hypodermic syringe below the angle of right scapula into the dull area. Patient made no complaint of the injection: it did not give rise to cough, but patient said she could smell something afterwards.

18th.—Ten minims of ether containing two grains of iodoform were injected, and this was repeated daily.

The injection gave no pain or cough: no complaint was made concerning it, and there was no hæmoptysis. Weight, 9st. 2lb.

March 5th.—Weight, 9st. 4lb. Patient is much better. Temperature is normal; no evening rise, no sweating. There is no cough or expectoration. Breath is rather short. To discontinue the injections and the pills, and to take cod-liver oil containing one grain of iodoform three times daily.

March 10th.—Weight, 9st. 6lb. Steady improvement. Made out-patient.

31st.—Weight, 10 stone. A little cough; no spitting whatever.

The fourth case was one of advanced tubercular phthisis of twelve months' duration, with much anæmia, œdema of legs, and albuminuria, with sub-normal temperature. Injections were made into the left upper lobe, at the infra-clavicular and superior axillary regions, on six occasions in nine days. There was no cough or hæmoptysis, but some complaint of pain round the left chest was made after the later injections. There was no change in the physical signs, and the weight remained stationary. She did not think it necessary to remain longer under treatment.

Ann G., 25, single, works at cotton factory. Father and mother died of consumption at about 50. Two brothers and one sister are healthy. Was quite well till a year ago; has since then been getting thin, has had bad cough for some months, and has been short of breath, but has never spat blood. Two months ago first noticed swelling of feet, and this has continued.

March 20th.—Anæmic. Weight, 7st. 1lb. Hæmic murmurs at base and in neck. Catamenia regular. Dul-

ness and crepitation at left apex, front and back. Liver dulness in excess. Splenic dulness down to edge of rib. Some œdema of feet. Urine, 80 oz., 1009; neutral, pale, with one-fourth albumen. Ordered iodoform, gr. j., in pill, every four hours.

March 24th.—Œdema of legs subsided; little cough, no sputum. Temperature varying from 96·6 to 99·6.

March 31st.—Patient feels better. Weight, 7 stone. Taking iodoform, gr. ij., every four hours.

April 2nd.—No œdema. Temperature sub-normal. A little sputum was obtained, and was found to contain tubercle bacilli. Two grains of iodoform, dissolved in ten minims of ether, injected into the apex of left lung below the clavicle: it did not give rise to cough, nor did the patient taste the ether.

April 3rd, 5th, 7th, 9th, 10th.—Injections of iodoform repeated. The patient complained of pain round the left chest; accordingly the injection was discontinued. It did not give rise to cough or hæmoptysis.

April 12th.—Patient remains stationary in weight—7 stone.

15th.—Ordered iodoform, dissolved in cod-liver oil with creosote.

25th.—Gained one pound in weight.

28th.—Is much improved. Physical signs unchanged. Dull at left supraspinous fossa, and down to angle of scapula; in front, dull down to third rib. Dulness also below right clavicle and above it. No œdema. Not much cough; no expectoration. Urine varying from 1008 to 1010; albumen as before. Temperature, sub-normal. Made out-patient.

The fifth case was one of chronic tubercular phthisis, which had been under treatment for eighteen months as

an out-patient, and had taken iodoform in pill or dissolved in cod-liver oil during nearly the whole of this period. The weight had increased from 8st. 2lb. in December, 1883, to 8st. 9lb. in September, 1884, after which time it remained stationary till May, 1885, when he began to lose weight, partly in consequence of sore throat, which gave rise to some dysphonia, although it did not result in laryngeal ulceration. Five injections were made from July 12th to the 22nd. The fluid was injected into the consolidated upper lobe of the left lung, at the supra scapular and infra-clavicular and superior axillary regions. The first injection of ten minims of the ethereal solution gave rise to cough, with momentary faintness and pallor. The following injections were limited to five minims, and no faintness ensued. Some pain and a localised pleuritic friction followed the third. The fifth was followed by neuralgic pain in the shoulder and up the neck. The temperature continued to be sub-normal, and the weight stationary.

Abraham L., æt. 31, married, shop assistant. Admitted July 11th, 1885.

Patient, previous to admission, had been under treatment as an out-patient for eighteen months. Treatment began on the 27th December, 1883, and has been continued up to the present date. When patient first came under notice he had been suffering from phthisical symptoms for eighteen months. During that time had a constant cough, with yellow nummular but scanty expectoration, which, on examination, was found to contain numerous bacilli. He complained also of general weakness. Never had any hæmoptysis or diarrhœa, and night sweats were only slight. Had not noticed any marked wasting, but said that he was not so stout as he was

formerly. Voice husky at times. Patient's father died of phthisis.

Complexion of patient pale, but with no marked hectic flush. Fairly well nourished, and muscular tone good. Tendency to clubbed nails, but condition not absolutely typical. Pulse good. Heart normal. Abdominal organs healthy. Urine: Sp. gr. 1022; alk., no alb. Chest: Left side, dulness in front in infra-clavicular region for first three intercostal spaces, with some dulness also in supraspinous fossa behind. Loud bronchial breathing over area of dulness, with, at times, fine crepitation, best heard after coughing. Expiratory sounds were prolonged, and there was bronchophony, but no pectoriloquy. Vocal resonance and fremitus increased on left side. No evidence of existence of any cavity. No perceptible flattening of chest wall. Temperature normal.

WEIGHTS.

	st.	lb.
December 27th, 1883	8	2
January 21st, 1884	8	6
February 4th, "	8	6
" 11th, "	8	6
" 25th, "	8	6
March 3rd, "	8	7½
" 24th, "	8	8
June 2nd, "	8	7
July 16th, "	8	7
August 11th, "	8	9
September 8th, "	8	9
February 16th, 1885	8	7
March 30th, "	8	8
May 11th, "	8	8
June 22nd, "	8	7
July 16th, "	8	5

Treatment.—Whilst an out-patient, from December 27th, 1883, to July 12th, 1885, patient was treated mainly with the pil. iodoform.; maximum dose, gr. ii. t.d.s. and cod-liver oil, sometimes alone and sometimes in combination with iodoform or creosote. Also had the Syr. Ferri. Hypophosph. Co. and tonics, with syrup to allay cough.

On December 1st, 1884, he had some symptoms of the toxic effects of iodoform, and iodine was found in considerable quantities in urine. Iodoform was discontinued for about six weeks.

July 12th.—On day after admission ♏ x. of the ethereal solution, containing gr. ii. of iodoform, were injected into the lung. The point of injection was just below the anterior fold of axilla, in the fifth intercostal space. During the injection patient began to cough, and soon felt faint and turned pale. No coughing after injection, and no spitting. Felt a little pain down the left side and left arm afterwards, and said that he could taste the iodoform.

13th.—Passed a good night. Very little cough and no spitting. Injection repeated, ♏ v. (gr. i.) in supraspinous fossa. No cough or spitting, but felt a little faint. Patient did not on this occasion taste the injection; and it is doubtful whether it reached the lung, owing to the thickness of muscle.

14th.—Injection repeated below clavicle, second space, ♏ v. (gr. i.).

15th.—Injection, ♏ v., in axilla.

16th.—Complained of a good deal of pain in left side at seat of injection, and on auscultation House Physician detected a pleuritic friction rub. Injection was, therefore, not repeated to-day.

18th.—Injection, ♏ v.

22nd. " "

23rd.—Good deal of pain in chest, causing sleeplessness. No temperature and no signs of pleurisy. Expectoration very scanty, and cough slight; both diminished since admission. Weight, 8st. 5lb.

This series of cases is too small to enable one to draw any general conclusions: the results have not been decided, excepting from the negative point of view. They support the experience of Pepper, Fraenkel, Robinson and others, that injections into the lung substance are not dangerous. They also show that in many cases we may expect to relieve symptoms; and further, they encourage the hope that the method will become a familiar, an efficient, and a useful addition to our methods of treatment directed to the cure of chronic tubercular and other diseases of the lungs.

CASE OF RUPTURE OF AORTA.

By HENRY MARSHALL, M.D., F.R.S.E., Clifton.

E. S., æt. 35, housemaid in a private family, had been feeling vaguely ill and out of sorts (though able to do her work) for some two or three weeks before I saw her on January 24th, 1885. She was then in bed, on account of what appeared to be an ordinary catarrh, from which she had recently recovered in two or three days, but complained of great sleeplessness. For this I prescribed 10 grs. of hydrate of chloral and 15 grs. of bromide of potassium at bedtime, which she took for two nights, and when I saw her on the afternoon of the 31st she was downstairs, having resumed her work, and feeling, as she assured me, quite well again, if she could only sleep

better at night: for although the first night on which she took the draught she had slept well, the next one she had been very restless. I prescribed 20 grs. of bromide of potassium with ℥xxx of aqua lauro cerasi, to be taken at bedtime. About 11 that night I received an urgent summons to see her at once, and as she lived very near my own house, I was in her room a few minutes afterwards, when I found her sitting on the side of her bed, supported by a fellow-servant, quite dead.

I received the following account: She had appeared during the day and evening in excellent spirits, remarking how much better she felt. After taking a hearty supper, she went upstairs to her bedroom. The nurse, who occupied a room next to hers, heard her cough a good deal while she was undressing; but shortly afterwards, when the cook, who slept in the same room, entered, she noticed that the housemaid appeared to be sleeping quietly, so she undressed and got into bed without speaking to her, and soon fell asleep, but was shortly after awakened by hearing her fellow-servant walking about the room and crying out that she was poisoned. She called to the nurse, who, having hot water ready, gave her some to drink, with the intention, which was partially successful, of making her sick; and at the same time there was a small relaxed action of the bowels. The breathing now became very laboured, and had ceased a minute or two before I entered the room. The interval between her getting out of bed and her ceasing to breathe was, as far as I could ascertain, about a quarter of an hour.

Being at the time unable to account for the cause of death, and thinking it possible that it might be the result of an overdose of aqua lauro cerasi, or some other poison,

I requested my friend Dr. Markham Skerritt to make a post-mortem examination, which he did on the day following her death; and I am indebted to him for the following account of the appearances he found:

"When the pericardium was opened, the aorta, from its origin for about an inch, was found to be adherent to the surrounding parts by recent lymph, its surface being roughened and reddened, and its texture softened; the vessel was here somewhat dilated. When the aorta was opened, it was found that the internal and middle coats were split across right round the circumference of the vessel, about $\frac{3}{4}$ inch above the aortic valves, and that from the site of rupture down to the valves these coats were separated from the external, so that the separated portion hung down free in the blood-current. On the distal side of the rent the separation of the coats extended for only about the sixteenth of an inch. The edges of the ruptured coats were as clean and sharp as if cut with a knife. There was a small amount of superficial atheroma in the vessel, but there was no evidence that the rupture had originated in an 'atheromatous ulcer.'"

I may observe, that my attendance on the case during the week previous to her death being of a casual nature, and there being no symptoms, unless perhaps the sleeplessness, suggesting any form of cardiac disease, I did not make any careful auscultation of the heart, although on the first day I saw her I made a general examination of the chest, and noticed no abnormal sounds; nor is it probable that any existed. The lesion, I imagine, took place only a quarter of an hour before her death; but if so, it is curious that it should have occurred when she was lying quiet and asleep.

TWO CASES OF INTESTINAL POLYPUS.

By H. Boyle Runnals, M.R.C.S., Saltash, Cornwall.

I have published an account of these cases, and more particularly the first one, as an example of the great difficulty so often experienced in diagnosing the causes of intestinal obstruction; and it is more interesting since the thorough educating discussion upon that subject reported in the March edition of this *Journal*. It will be observed that these cases produced exactly opposite symptoms: the first one, those of intestinal stoppage; and the other, chronic diarrhœa, or rather, an inability on the part of the rectum to retain its contents.

Mrs. W., aged 45, married, and the mother of three children, came under my care twelve months ago, and was then suffering from intestinal obstruction, which I attributed, from the absence of other symptoms, to fæcal accumulation. Defecation had not taken place for six days, and as the symptoms were not of an acute nature, beyond the vomiting and a severe pain in the back, I gave her castor oil, with no effect; and three days after I was called in I administered a soapy-water enema, injecting with great force. This resulted in the discharge of a large quantity of hard fæcal matter. As the pain in the back had not ceased, and thinking it might be due to uterine displacement, I examined the vagina, and found the uterus slightly displaced downwards, which was easily remedied by a pessary, and the pain in the back diminished. I did not see her again until May 2nd of this year, when I was called in to attend her for a "facial carbuncle," which so extensively implicated the muscles of the face that she could not open her mouth, and the only means by which she could

feed herself was sucking through a straw. This rendered her very weak, and the bowels again became obstructed. I was afraid to give her a purge on account of her exhausted state, and resorted again to an enema. This produced a copious evacuation of very hard offensive fæcal matter. The pain in the back was much worse now than it ever had been (I was told now that she had suffered from the pain in back for three years), but I could discover nothing to account for it. There was slight abdominal tenderness, more particularly in the left iliac region. Percussion elicited no dulness; in fact, I could not diagnose anything abnormal. These symptoms continued for a week, when one morning my attention was called to the condition of the urine. This I examined, and found it loaded with pus cells, and that it coagulated almost *en masse* from the quantity of albumen present. I thought there must be some other cause besides renal to give rise to such a state, and presuming it might be due to a vaginal discharge becoming mixed with it, I again examined the vagina, and to my surprise and horror found a gangrenous mass present at the orifice of that canal. On more careful examination, I found it was protruding from the rectum into the vagina through a large recto-vaginal fistula. I could not move it. I syringed the rectum and vagina with a lotion of carbolic acid, which produced a copious discharge of offensive pus. The syringing was repeated several times a day, and the fifth day the gangrenous mass, about the size of a swan's egg, was discharged. She now made rapid recovery, and at the present time is nearly convalescent, although an enormous recto-vaginal fistula remains for future treatment. My first thought on seeing this gangrenous mass was, that it was an "intussuscepted

intestine;" but, of course, it could not be so, for she had not displayed any symptoms of it; neither, for the same reason, could it be of a cancerous nature. On examining it microscopically, I found it consisted of a fibro-mucous tissue. Now, remembering the constant pain in the back from which she suffered, and the obstinate condition of the bowels, I came to the conclusion that this mass of tissue was a "fibro-mucous" polypus, which had been attached to some part of the intestinal canal by a slender pedicle, which had ulcerated on account of the debilitated state she was in for such a long time. What else could it have been?

The other case was that of a man who was an inmate of the St. Marylebone Workhouse Infirmary at the time I was its Medical Superintendent. He told me that for four years he had suffered from diarrhœa, for which he had been unable to obtain a remedy, although he had been most assiduous in his endeavours to do so. Telling me he suffered from hæmorrhoids, I had a look at the anus externally, and found the veins much congested. Being very busy at the time, and not taking much interest in the case, I ordered him an astringent, and saw no more of him for some time, until one morning, when he again came to me, and said he was no better. *Age quod agis.* Thinking it queer that it was so obstinate to treatment, and as he told me that for the last twelve months he had a constant desire to defecate with a bearing-down pain, I attributed it to internal piles or possibly dysentery. I carefully examined the rectum, or so much of it as I could reach with my finger, and found an obstacle immediately inside the anus. It was a freely movable pedunculated mass attached to right side of rectum, about one inch from the orifice. Not having an

ecraseur, I ligatured the pedicle by means of a Bellocq's epistaxis canula. I kept the patient in bed, and in four days I found the mass had separated, and with a pair of vulsellum forceps I extracted it after a little trouble. In a few days the apparent diarrhœa ceased, and I discharged him cured. It was about the size of a fowl's egg, and consisted of fibro-mucous material. Of course, what was thought to be diarrhœa was simply a loss of power upon the part of the sphincter muscles. I consider these cases particularly interesting and instructive, and they show how careful one always ought to be in making a diagnosis.

CASE OF LUMBAR SPINAL CARIES, PSOAS ABSCESS, SUPPURATIVE CEREBRO-SPINAL MENINGITIS, SUICIDAL TENDENCIES. DEATH, NECROPSY.

By HARDING H. TOMKINS, M.R.C.S., Gloucester County Lunatic Asylum.

E. C. J. was admitted to the Gloucester County Asylum on August 28th, 1880. At that time he was passing through his first attack of acute mania, having been ill three months. He was *not* suicidal, but was dangerous to others. His family history, physical and psychological, was good, there being no history of phthisis, of neuroses, or insanity. His own bodily condition was good, and he was free from any physical ailment: he was *not* ruptured on admission. Mentally, he was sullen, morose, irrational, and reticent.

From this attack he recovered partially, only to pass through a recurrent attack in June, 1881, which left him considerably demented.

In February, 1882, he complained of cold and pain in his back, which, however, appeared to pass away under simple treatment.

During March, one day it was discovered that he was ruptured, and subsequently there was slight inflammation in the integuments, necessitating his removal to the sick-ward. The hernia, which was a left inguinal hernia of small size, was easily reduced.

By January, 1883, he had improved bodily, being in fair health and able to work about in the house; he was, however, more demented.

In March (and from that time forward) it was noticed that he acquired a slouching, awkward gait, usually having his hands in his pockets. This, however, was not taken much notice of, in an asylum where so many patients have like peculiarities of gait and appearance. He remained apparently unchanged, bodily or mentally, until,

January 7th, 1885, when the hernia suddenly became about three times its usual size, causing him a certain amount of pain. He was put to bed and kept there, and on the second day strong lead and opium lotion (liq. plumbi. subacet., ʒiv.; tr. opii., ʒii; aq., oj) was applied on account of hyperæmia and increased local temperature. In the course of a few days there was much induration, extending into Scarpa's triangle, with a localized area, soft and fluctuating, evidently containing pus. This was aspirated, about 10 oz. of pus being withdrawn. The skin around the puncture commenced to slough, and the abscess sac was therefore cut into, and the wound dressed with iodoform and carbolic tow. The amount of pus became very small, and the hernia subsided, there never having been signs of obstruction. The drainage tube

was removed; then, however, pus collected in the iliac fossa of the left side, which was let out, under chloroform, by freely incising the original wound, a drainage tube also being passed under Poupart's ligament, and another deep amongst the muscles of the thigh, which were lying dissected out by the pus. The little finger passed with ease through the inguinal canal into the abdomen. About a pint of pus escaped, the patient being placed in the prone position.

For a few days the amount of pus diminished, and there was none discovered in the abdomen. The cavity was syringed daily with solution of boro-glyceride (5 %), and dressed as before, antiseptic surgery being impossible, as the man frequently removed all dressings. One night, when making my night round, he begged me to take care of a purse he had, containing a shilling or two, as he said he should never want it again. Being struck by the earnestness of the request, and the man's appearance, I felt sure he contemplated suicide; therefore I sent one of the night attendants to remain with him, who discovered that he had suddenly become intensely suicidal. On visiting him soon after, I found him extremely agitated—his lips compressed, nostrils dilated, and whole expression very wild, his pulse also beating at 140. He begged and implored me to kill him, saying that if I did not, he must do it himself. When, after trying for a long time to pacify him, I told him I must not kill him, he suddenly sprang up in bed, cursing and swearing, and vowing he *would* kill himself, and that he would overpower us if we tried to prevent him. It took three men to put him in a padded room, where, after ½ grain of morphia hypodermically, one attendant remained with him all night, he getting scarcely any sleep. From this

time till death he remained determinately suicidal. He now complained of pain in his knee and the front of his thigh on the left side; pus, also, accumulated in the abdomen, pointing in Scarpa's triangle and to the outer side of the tuber ischii on the *right side*, in which latter position an opening was made, under chloroform, on March 7th, 1885, 2½ pints of pus being evacuated.

After the second operation he fell away rapidly, the amount of pus being very large daily. He also complained of pain in his lumbar region for the first time since February, 1882; there was, however, no tenderness or apparent deformity, though on several occasions he was examined for spinal curvature. He died on March 20th, apparently from exhaustion. His appetite remained good up to the last. His temperature could not be ascertained at any time by the thermometer; but it appeared never to rise to any considerable extent.

Post-mortem Examination.—Brain, 44½ oz.; substance anæmic and somewhat atrophied. The membranes presented the usual appearance of acute meningitis, the base of the brain being also covered with pus, and *all the ventricles* contained pus.

Spinal cord was everywhere surrounded by pus, the membranes being hyperæmic and much thickened.

Spinal vertebræ: The second and third lumbar vertebræ were in an advanced state of caries centrally; but the external surfaces appeared healthy; hence no deformity was produced. The inter-vertebral disc had been absorbed. There were two large abscesses in both psoas regions, communicating with the spinal canal between the second and third lumbar vertebræ.

Right lung was consolidated at the apex, and presented many tubercles.

It is interesting that so advanced a state of caries and abscess could exist (commencing probably February, 1882), the patient yet retaining power and ability, not only to work for so long without evidence of pain, &c., but also to fight so actively when trying to get an opportunity to kill himself. The diagnosis was made particularly hard because the only symptom which might have aroused suspicion before the formation of pus (viz., his peculiar gait) was of so little account amongst lunatics, who assume all kinds of positions and carriage without any apparent reason; and also because when an abscess did form, it appeared to be accounted for at first by the sudden tearing up of the cellular tissue by the enlargement of a hernia, which was followed by induration and suppuration. It is probable that the hernia was caused directly by the pressure of the pus from within, and, from the history of the case, that the two abscesses were originally distinct, but that one having formed externally and destroyed the superficial structures, the psoas abscess broke into the cavity already formed, a channel having been opened by the hernia subsiding. A more interesting point is the evidence of so much mischief in the cerebro-spinal system, with but few symptoms to indicate it, and these such as can only be recognised by looking back after the close of the case. The pupils exhibited no change whatever; the only sign of change of power or sensation was slight stiffness and pain in the lower jaw. There was no mental symptom except the sudden change to violent suicidal tendency from sullenness and dementia; and even this is not unusual in recurrent maniacs, the symptoms changing in different attacks. There were no convulsions; nor was there coma, the patient apparently dying of simple exhaustion.

It seems probable that the paucity of symptoms may in part be explained by the previous attacks, extending over five years, having resulted in dementia, accompanied by wasting of the brain, so that the abnormal amount of fluid produced no compression of the brain tissue, which in its turn was altered so as to render it less sensitive to such changes as those discovered at the *post-mortem*. Also the amount of pus present was not necessarily a measure of the extent or acuteness of the inflammation, since doubtless a good deal was merely the result of gravitation from the spinal abscess, although the membranes presented appearances sufficient to warrant a diagnosis of meningitis.

A CASE OF SUDDEN PULMONARY CONGESTION RELIEVED BY ASPIRATION OF THE AORTA.

By J. Dacre, L.R.C.P. (Lond.), M.R.C.S., House Physician, Bristol Royal Infirmary.

F. Y., a labouring man, æt. 40, was brought to the Bristol Royal Infirmary at 11.30 on the morning of April 19th, with the history that for twelve months he had had a severe cough, had been losing flesh slightly, and on a few occasions had spat up a little blood. His condition had never before been in any way critical, and up to the day previous to admission he had been doing his work regularly. About three hours before being admitted, he had got up as usual, had put a light to the fire, and was preparing breakfast, when suddenly he began to be very short of breath, complained of pain across his chest, rapidly became blue in the face, and had shown no sign of improvement since.

When seen at the Infirmary, he was gasping for breath, each inspiration rattling the mucus collected in the throat and larynx, and which he was too feeble to expel. There was great lividity, but no enlargement of the superficial veins of the neck or arm; the skin was cold and clammy; the pulse very feeble and rapid; loud gurgling râles could be heard over each lung, both in front and behind; the area of cardiac dulness was very small, and the apex-beat could not be located; the sounds of the heart were barely audible, but a little epigastric pulsation was visible.

He was immediately put to bed, warmth applied, and stimulants given freely.

In spite of the restoratives, he steadily grew worse, until 1 p.m., when he was seen by Dr. Shingleton Smith, under whose care the patient was, and to whom I am indebted for permission to publish the case.

He was then *in extremis;* the conjunctivæ were insensible to the touch; the pupils did not react to light; no arterial pulse could be felt; there was no epigastric pulsation, nor could any heart-sound be heard; the respirations were slow and shallow; the mouth wide open, and each inspiration sudden and gasping.

As there was apparently next to no systole of the heart, and no distension of superficial veins, it was determined to relieve the venous engorgement of the lungs and right side of the heart by tapping the right auricle itself.

Accordingly, a medium-sized needle and canula was inserted in the fourth intercostal space on the right side, close to the edge of the sternum, passed straight through the intercostal tissue until it was felt to be in the chest; the point of the needle was then turned sharply inwards under the sternum, and pushed in that direction for about

an inch and a half, when it was felt to be free in a cavity, but no impulse was communicated to it. On removing the needle, dark blood immediately jetted out of the canula, which was at once attached to an aspirator, in order to withdraw the blood more carefully. Immediately after the first gush of blood, the heart's action was resumed sufficiently to communicate an impulse to the needle; and when 16 ounces had been removed, there was a very fair pulse at the wrist. In five minutes, 30 ounces of dark-coloured blood had been withdrawn. The needle was then removed; no hæmorrhage took place through the puncture, and this was at once sealed with collodion.

The lividity was at once very materially lessened, consciousness returned, he breathed more readily, and was able to speak.

A few minutes after the withdrawal of the needle, he became very restless, and the pulse rapidly failed again. His head was placed level with the trunk, warmth applied to the surface, and 30 minims of ether given by hypodermic injection. This revived him; the pulse again became perceptible, and the restlessness diminished. There was no indication of effusion of blood into the pericardium.

For two hours he then remained fairly comfortable, the pulse remained steady, the dyspnœa was obviously relieved, and he was able to take stimulants easily. At 4 p.m. he was found lying on his left side, slightly prone, this being the position in which he could breathe most easily. He readily turned over, however, when asked to do so. He complained of great thirst, and of feeling very hot.

There was no increase in the area of cardiac dulness; a little heaving pulsation could be seen in the epigastrium;

the pulse was quite regular, though rapid and very small. A poultice was ordered to the back, as he complained of pain between the scapulæ; and he was given iced milk to drink.

At 8 p.m. his condition was again very serious; the lividity was extreme, and the pulse was imperceptible at the wrist.

The aspiration was repeated, the same position being selected for the insertion of the needle as before. Sixteen ounces of venous blood were withdrawn, and the pulse for a few minutes revived. He then suddenly became more restless than ever; said he felt "so very hot;" threw his feet out of bed, and then lay on his left side. The pulse rapidly failed; the breathing became slow and more gasping; and, in spite of stimulation by hypodermic injections of ether and brandy, he died at 8.40.

At the *post-mortem* examination, made sixteen hours after death, it was found that the needle had passed immediately above the right auricular appendix, and had pierced the anterior surface of the aorta about $\frac{1}{4}$ inch above one of the semilunar valves.

Both sides of the heart were distended; and there was great hypertrophy of the walls of the left ventricle, and extensive vegetative disease of the aortic valves.

The first portion of aorta was dilated, and the heart itself was in a more horizontal position than is normal. The pericardium contained about 2 ounces of blood.

The lungs were excessively engorged, almost solid with œdema, and very emphysematous at the anterior edges and on the outer surface of the upper lobes.

The edge of the right lung had been pierced by each needle, but there was no extravasation of blood around either puncture.

Remarks.—Aspiration of the heart is an operation which has, as yet, met with so little consideration that it was thought the facts of an attempted aspiration were worthy of record.

It is greatly to be feared that blood-letting is practised far less often than it ought to be, and that we err much more on the side of hesitation and inaction than our forefathers did on that of indiscretion; for it cannot be doubted that a timely and judicious depletion is a most invaluable adjunct in the treatment of cases in which there is distension of the right heart and venous stagnation.

The rapid flow of blood from a wounded vein undoubtedly relieves the distension of the right side of the heart, but it does so through the whole length of the systemic and pulmonary systems. Unless the flow be copious as well as rapid, the operation is futile, and in such a case arteriotomy would suggest itself; but it would certainly seem more rational to go to the overloaded reservoir itself, and tap the right auricle, provided it can be proved that such an operation may be done with impunity, thereby relieving it at once of its embarrassment without depleting the systemic arteries.

In the case under consideration, it was quite obvious that phlebotomy would have been attended with little or no flow of blood; for the superficial veins were not in the least distended, and proximal pressure made little or no difference, as the ventricular systole was so feeble.

It strongly resembled those cases of "Pulmonary Congestion" described by Dr. A. H. P. Leuf, of Brooklyn, in a paper published in the *American Journal of the Medical Sciences* for January, 1885, in which he strongly advocates the operation of aspirating the right side of the heart. All the cases described by him were characterised by

sudden onset, a feeling of oppression in the chest, rapidly-increasing dyspnœa, distension of right heart, and remarkable emptiness of all systemic veins. Death always resulted from cardiac failure, and *post-mortem* examination revealed excessive engorgement and œdema of the lungs, over-distension of the right heart, but comparative emptiness of pulmonary veins and left side of heart.

It was for the relief of one of these cases that Dr. B. F. Westbrook, of Brooklyn, originally planned and performed the operation of cardicentesis. In his report of the case he says: "As I was anxious to avoid any possible risk of increasing the peril of *any* patient, I chose for the subject of the operation, which I am about to describe, a case in which all chance of recovery had disappeared. The first attempt was a failure, inasmuch as the needle penetrated the aorta, and the operation was abandoned, although the needle had been taken from the aorta and placed in the auricle. Later on it was tried again, as a last resort, and about 100 *grms.* of fluid blood was withdrawn. The patient was more comfortable, as a result, and expressed himself as feeling much better." The ultimate result was, however, only palliative, for the patient shortly died.

In his paper, Dr. Leuf also mentions two cases of cardicentesis after somatic death, which were reported by Dr. C. L. Dana in the *New York Medical Record* of February 3rd, 1883—the result in each case being negative—and also two other cases of *accidental* heart puncture in patients with valvular disease, followed in each case by marked relief; one living five months, and the other four weeks, after the accident.

Cardicentesis, as a deliberate operation, may, therefore, be said to be entirely in its infancy; and any facts,

be they never so trivial, which can be brought to bear upon it, to render the desirability of its performance more worthy of consideration, must, at any rate, be of value.

The first point of practical importance is the site of puncture. Dr. Westbrook inserted the needle in the right third interspace, close to the sternum, and at the first attempt the aorta was penetrated. In this case the fourth space was chosen; and, of the two, this is perhaps preferable: for I have since found, in experiments on the dead body, that a needle passed directly backwards in this position almost invariably pierces the right auricle.

Dilatation of the aorta, from old-standing atheroma and valvular disease, had considerably altered its relation with the surface in this case; but in spite of this, if the needle had been passed directly backwards, instead of towards the median line, the desired object would most certainly have been attained.

As to extravasation through the puncture, in Dr. Westbrook's case there was none; in this, blood was found after death in the pericardium, but not in sufficient quantity to cause any appreciable distension, nor yet to give rise to any alteration in the area of cardiac dulness during life. The punctures were found to be quite contracted and impervious; but whether they would have become the seats of future dilatation, it is, of course, impossible to judge.

Aspiration of blood from the aorta must be looked upon only in the light of a formidable arteriotomy, relieving indirectly the right heart through the left ventricle, auricle, and pulmonary circuit; and the amount of success gained by this procedure would seem to warrant one in believing, that if the blood had been withdrawn directly

from the over-distended cavities themselves, the result would have been even more favourable than it was.

Palliation was the most that could have been expected in this case, and that certainly was obtained: for the man was granted a respite of at least six hours, the circulation was resumed, and the mental faculties regained; a fact which in some cases might be of the utmost importance.

At present such radical treatment could only be considered justifiable as a last resource; but if in such cases results are found to be satisfactory, it will, at any rate, then be a question whether the operation may not be admissible before the patient is absolutely *in articulo mortis*, and quite as justifiable as tapping the pericardium, aspirating the pleural cavity, or draining a cavity in the lung.

Notes on Books.

Gout in its Clinical Aspects. By J. MORTIMER GRANVILLE, M.D. London: J. & A. CHURCHILL. 1885.

Gout, and its Relations to Diseases of the Liver and Kidneys. By ROBSON ROOSE, M.D. London: H. K. LEWIS. 1885.

These two literary contributions, founded on the personal experience of their respective authors, lay no claim to be exhaustive treatises, or to supplant the older monograph of Professor Garrod. Both are clinical manuals, which, whilst they give a general outline of the subject culled from various sources, and direct attention to certain modern theories as to the origin and cause of the disease, are records of personal observation and individual thought. The former has much which will be new to the reader, inasmuch as the experience of the author differs in some points from what is commonly accepted; and the fertility of therapeutic resource, together with the unbounded belief in the efficacy of all the drugs he employs, are quite refreshing features in this too-unbelieving age. The latter book aims to prove that functional disorder of the liver underlies the majority of gouty manifestations, and that the kidneys are only secondarily implicated; it follows that the object of treatment should be not merely the neutralisation of the *materies morbi* by means of alkalies, but, in an especial manner, the restoration of the hepatic functions.

As regards Dr. Granville's book, there is much that is new; but opinions will be likely to differ as to whether all that is new is true. For instance, page 23: "The idea that children are not affected with gout is manifestly fallacious; and I cannot help thinking that the disorder is of quite as frequent occurrence among females as among males."

Again, page 157: "I think I have seen acute gout in infants even during the period of suckling. I have no doubt as to the gouty character of inflammatory swellings of the

joints occurring, with distinct pyrexia, and subsequent peeling of the skin of the swollen limb, as early as the third year." "Gouty deafness in children is a familiar affection, the deposits being visible through the out-layers of the membrana tympani. Concretions are also to be found in the cartilages of the ears of children: some of the so-called 'cretaceous' accumulations under the prepuce are gouty, and I believe gout is responsible for not a few of the attacks of vaginitis or vulvitis, which are occasionally attributed to the irritation set up by worms."

Again, page 139: "The walls of the vessels of the encephalon are not unfrequently the seats of gouty deposit, and liable to give way suddenly."

Page 41: "Cases are on record in which the skin has been covered every morning with what is popularly called 'chalk,' giving the patient the appearance of having been dusted with white powder."

Page 149: "Gouty inflammation of, and deposits in, the larynx, with deposits of water in or beneath the vocal cords, are easily recognised."

Page 148: "I am confident that specially gouty inflammations attack other nerves, and why not the optic? I think that optic neuritis may be of gouty origin."

Page 46: "I have certainly found well-formed crystals of uric acid in the blood in the vessels of the brain after death, in cases of gouty inflammation of that organ, or, more accurately speaking, cerebral meningitis occurring in irregular gout."

Dr. Roose's account of treatment comprises a description of the various methods—dietetic, medicinal, and hygienic—which are commonly practised, and of which the utility has been abundantly proved. There is little to comment upon or to call in question; but it is a well-written and interesting account of what the careful and non-speculative physician may accomplish in the different phases of the disease. On the other hand, Dr. Granville's account includes much which is contrary to general practice and experience, much which is speculative, and much which is at least suggestive of hasty inductions from deficient premises. The author must, however, be allowed to speak for himself as to the utility of his armamentarium, which includes a great variety of drugs, each having its definite function, and which, in the author's remarkably fortunate experience, it rarely fails to perform, even when in conjunction with numerous others in elaborate combination. Numerous formulæ are appended, amounting to no fewer than one hundred and fifty-two, each of which

has its special uses; and a perusal of which cannot fail to be of service to the busy practitioner who has no time to investigate the action of new drugs, but will be glad to utilise those which have been found to be of such service by so painstaking and thoughtful an observer as Dr. Mortimer Granville.

Tracheotomy in Laryngeal Diphtheria. By R. W. PARKER. Pp. 124. Second Edition. London: H. K. LEWIS. 1885.

This is an excellent little work, giving in clear, simple language a thoroughly reliable account of the most approved methods of treating laryngeal diphtheria. The general principle underlying the treatment advocated is "that as a largely local disease, diphtheria at all stages requires local treatment." This principle is further amplified in certain suggestive "aphorisms:"

"The local condition in diphtheria precedes the general; the latter depends largely on the absorption of the septic products of the local condition.

"The disease spreads locally by the contagion of its own products.

"Spread of the disease must be combated by the complete destruction and removal of the products of the local lesion.

"Death very generally occurs from extension of the disease into the lungs.

"The value of any form of treatment may be gauged by the success with which extension of the disease is prevented.

"The operation of tracheotomy is only indicated where there is evidence of mechanical obstruction in the larynx or trachea.

"Retraction of the soft parts of the anterior chest wall during inspiration, together with the more or less complete suppression of voice, are the indications *par excellence* for the performance of tracheotomy.

"Tracheotomy is in no sense a therapeutic measure; therefore, neither the local nor the general treatment of diphtheria should be suspended after the performance of the operation.

"The chief objects of the operation are to facilitate treatment, and to guard against death from mechanical causes while this treatment is being carried out.

"To be of service, the operation must be performed while the disease is local, and before its spread towards the lungs

or general infection of the system places the patient beyond the reach of surgical help."

The purely practical part of the work is particularly well handled. We are impressed with the possible advantages of the author's angular tube, and mean to give it a trial. We heartily commend the book to our readers.

Bodily Deformities and their Treatment. By H. A. REEVES. Pp. 460. London: H. K. LEWIS. 1885.

The principle of special men for special subjects, a homogeneous series and one publisher, is a novel feature of medical book production. Wood & Co. have had their series; Cassell & Co. have their series already well advanced; Lewis has had his series in progress for a longer period, but its growth is not very rapid. So far, however, it is good. The author of the work before us appears to be a many-sided man. In the broadest sense, he appears to be a general surgeon; and in the most liberal possible sense, he is at the same time a specialist. We fully admit the capacity of such a man to instruct us in subjects of the greatest breadth, as well as of the most rigid circumscription; and in the work before us we see no reason to depart in practice from the liberality which we would grant him in theory.

Mr. Reeves's work is certainly a good one. It has all the breadth of the general surgeon, with very little of the narrowness of the specialist. If we wished to be hypercritical, we should say that it had too much of the freedom of the scribe, with too little of the gravity of the scientist. Discounting the evident facility of penmanship, and balancing this with the evident familiarity with his subject, we must admit that on the whole Mr. Reeves has produced a work bearing evidences of great ability in the handling of theory, and of considerable discrimination in the working out of practice.

There is some originality in the work. The subjects of Spring Finger and Paralytic Dislocations are essentially novel. An ingenious operation for nasal depression is also new to British surgery. His classification of Club-foot is a novelty that is valuable. Most of the illustrations are original, and this is a matter for praise; unfortunately, most of them are bad, and many are simply execrable. We must admit that if we can eliminate the artistic, we can detect in

most of them the useful; but surely, in the present day, it is possible to combine both.

If the vices of the book are numerous, they are, probably, unimportant; the virtues are, undoubtedly, numerous and great. The breadth and grasp of the work, the clearness of its language, the precision of its sub-divisions and definitions and classifications, alone make it worthy of theoretical mark and practical value.

The Collegian of 1666 *and the Collegians of* 1885; *or, What is Recognised Treatment?* Pp. 118. London: LEWIS. 1885.

We must read this book to discover its author and his purpose. It is written by Mr. H. O. Thomas, of Liverpool, and it is intended to prove that Sydenham and Mr. Thomas alone among medical men have properly understood and taught the treatment of Intestinal Obstruction by "rest, starvation, and opium." Mr. Thomas seeks to support this proposition by "evidence which shall equal any confirmation required, outside of mathematics," expressed in English that is always vigorous in words, but somewhat weak in grammar, and positively demoralised as to spelling. For the spelling, Mr. Thomas is probably in no way responsible, but it jars on one to meet such words on one page as "laparrotomy," "publically," "antisceptic;" and over the page to meet such a sentence as this—"This operation is the making of an opening in the abdominal wall and stitching to this gap, a presenting portion of bowel and there incisins it." If Mr. Thomas was his own proof-reader on this occasion, we advise him on no consideration to do himself this injustice again.

With all its drawbacks, the book contains some clever and close criticism of the most recent writings on the treatment of Intestinal Obstruction. Mr. Mitchell Banks and Mr. Treves, in particular, he has pursued step by step, throughout a veritable labyrinth of mazy windings, to prove in wholesale and in detail that neither one of them has properly understood or appreciated Sydenham or himself. Mr. Bryant does not escape, and a good many others are made to feel the weight of Mr. Thomas's lash.

With the exception of those whom he has directly influenced, Mr. Thomas tells us that no practitioners have as yet proved themselves competent to treat Intestinal Obstruction. It is impossible to withhold our admiration from a

man who makes a statement of this sort. It is almost as if he were preaching a crusade. He evidently believes in himself and his measures, and the very enthusiasm of the man is infectious.

In calm and contemplative moments, the reviewer has had an uncomfortable feeling that he has seen and practised too much of the "rest, opium, and starvation" treatment; but the perusal of Dr. Thomas's work has soothed his conscience, and will very likely induce him to try it again. He is not quite sure how he is to ring the changes on his past practice, unless it be by more rest, more starvation, and more opium; but he means to purchase Mr. Thomas's large work on Intestinal Obstruction, and try and find out.

Pathological Mycology. By G. SIMS WOODHEAD and A. W. HARE. Section I. — Methods. Pp. 174. Edinburgh: Y. J. PENTLAND. 1885.

This work is intended as a practical guide to the examination and cultivation of micro-organisms, especially of those that are supposed to be connected with disease. So far, the authors have fully and satisfactorily succeeded in their purpose. There is no work in the English language which, in so small a space, gives such accurate and trustworthy accounts of the best methods of working at this difficult and delicate subject. There is little attempt at originality, either in method or in pursuit; the work simply represents the most approved practical plans of working at the subject in pathology and experiment. The selections have been made with the judgment and sincerity of full knowledge and honest discrimination; we are not worried either with the hobbies of laboratories, or with the abuse of investigators, and the whole subject is presented in a simple and workmanlike spirit, which is both soothing and satisfactory.

We must once again bestow a word of praise on the manner in which the publisher has done his work. The printing and binding are as usual excellent, but the illustrations are simply beyond all praise. We confess to an ignorance of the process whereby poly-chromic representations of great beauty and finish are introduced in the midst of the letterpress without apparently affecting the cost, while we heartily recognise its value for purposes such as are aimed at in this work.

Face and Foot Deformities. By FREDERICK CHURCHILL. Pp. 195. London: J. & A. CHURCHILL. 1885.

Mr. Churchill tells us that he has associated the face with the foot in his monograph "chiefly because deformities of these members of the body being more manifest than deformities elsewhere, they constitute a greater hindrance to success in life." He justifies his right to teach on the subject in the following involved, not to say ungrammatical, sentence: "I may add that, as Surgeon to the Evelina Hospital for Children, these deformities of the body have occupied much of my thought and attention, with an earnest desire to erase from the chapter of accidents as many as possible of such unsightly disfigurements; so that in the inevitable struggle for supremacy, in after life, these poor children may stand a better chance of competing for the prizes, and not be so heavily handicapped in the race by their more fortunate competitors." Over the page we are told that "there are an endless variety of congenital deficiencies." Finding this sort of writing in the short preface, we naturally look for much more of it in the body of the book; and we are not disappointed. Mr. Churchill is by no means unique in the freedom with which he handles the English language. Indeed, want of the ordinary educational training of the cultured gentleman is daily becoming more painfully prominent in our profession. If our examining bodies were to demand a little more in the preliminary training, they might reasonably expect a little more in the professional pass; and then, instead of a cry for levelling down to meet the ordinary capacity of the uneducated student, we might have a demand for a levelling up to suit the culture of what has been called a learned profession.

This by the way, however.

The matter of the book is good. The descriptions of the deformities are clear and suggestive, and the treatment always sound, and occasionally novel. His plan of treating port-wine mark, by transfixing the larger vascular trunks with a needle cautery, seems to be promising. For the treatment of some of the minor deformities, especially such as are caused by skin diseases, many useful practical hints may be found. His advice in the treatment of club-foot has the genuine ring of practical common-sense. He says: "I must confess that I am a great enemy of the surgical appliance maker in the treatment of these cases—a business which, under the high-sounding title of orthopædic mechanician, is, I believe, very

remunerative." We did not again select the sentence because it was ungrammatical, but because it expressed an opinion which we most cordially endorse. The value of manipulation and encasement in plaster of Paris is fully recognised, and sufficiently explained.

The drawings, some of them full-page lithographs, are decidedly good, and the general get-up of the work—as to paper, printing, and binding—is faultless.

Suicide. A Social Science Treatise. By W. WYNN WESTCOTT. Pp. 191. London: H. K. LEWIS. 1885.

In this small work, Dr. Wynn Westcott has presented us, in compact form, with a thoroughly scientific and highly interesting account of suicide in all its relations—historical, legal, political, and racial. Every chapter—every page, indeed—teems with interesting information, much of it bearing weighty meaning. We would particularly refer to the alarming fact that "the civilized states of Europe (with three exceptions) show a gradual and uniform increase of suicide-rate; and that, even since the beginning of the century, self-destruction has increased, and still goes on increasing, more rapidly than the increase of population, and to a greater extent than the general death-rate." One statistician has said that, "given the number of persons in the public schools of a country, he could deduce the number of suicides which took place there annually." It is a melancholy fact that increase of education increases the tendency to self-destruction.

The peculiarities of race are extraordinary. "In Europe, the highest proportion of suicide is shown by the Germanic races; and the two stocks, German and Scandinavian, divide the supremacy for the maximum rate. The *ne plus ultra* of German purity in race is found in Saxony, and this kingdom has the largest suicide ratio of any country. The height of Scandinavian purity in race is found in Denmark, and there also the ratio is very large—enormous, in fact. . . . The ratio is much smaller in the Anglo-Saxon than in the German. . . . The Celtic races avoid suicide. . . . The races of Slavonic origin show the lowest rates." These statements are supported by elaborate statistical tables.

It is even shown that races carry their peculiar suicidal propensities with them when they emigrate. In America, for instance, the excess of suicides by Germans over other races is as marked as in Europe. In respect to the influence of religion, we are told that "it is impossible to deny that the maximum rate constantly falls to Protestant states, to the Roman Catholic next, then the Greek Church, and, lastly, the minimum falls to the Jews."

Many other questions in relation to the causation of suicide are entered into and discussed with an insight and acumen worthy of all praise. Altogether, the work is one not only of profound interest, but of high scientific value.

Elements of Surgical Pathology. By AUGUSTUS J. PEPPER. Second Edition. Pp. 532. London: CASSELL & Co. 1884.

The call for a second edition of this work within the year is no more than a just expression of its merits. A few chapters have been re-written, and a good deal of additional matter has been introduced. Books are like living things: if they live and thrive, they go on adding to their bulk. If a few more editions of Mr. Pepper's excellent work are called for, we fear it will cease to be "Elements," and become a Manual. We are far from saying that the additions are not improvements, so far as the work is concerned; but, for the purposes of the student already overburdened, we would strongly urge the wisdom of compactness and brevity. We well know the difficulty in commanding this highest virtue of the author—brevity; and we must give Mr. Pepper full credit for having, so far, justly earned the title to this virtue. We hope that in future editions he will not be led to stray from it.

The work bears clearly the impress of a mind thoroughly and practically familiar with surgical pathology. The language carries everywhere the tone of independent and original thought; while the collocation of matter shows extensive acquaintance with the latest work in all departments. The subjects are treated in easily-followed sequences of concatenated reasoning, and not in isolated excerpts borrowed from larger works, as is too often the case in works such as this. The illustrations, where they are original, are somewhat stiff and wooden; otherwise, they are excellent.

Surgical Delusions and Follies. By JOHN B. ROBERTS. Pp. 55. Philadelphia: BLAKISTON & CO. 1884.

There is a great deal of sound practical sense in this little volume. How much of surgical practice is mere habit or fashion, and how little of it is based on scientific truth, one may partially infer from the pithy and outspoken remarks of Dr. Roberts. Though in some minor matters we cannot subscribe to the writer's creeds, we are in the main in thorough accord with his statements and beliefs. He lays about him right and left with a heartiness and vigour that are quite refreshing, and even stimulating; attacking many honoured observances, and demolishing many cherished idols. We should like to see a copy in the hands of every young surgeon (by the way, we should like it to be a better-bound copy than this one, which fell to pieces in our hands when we opened it), for he is likely to profit by it: old surgeons, firmly set in their evil ways, would only be aggravated by it, and probably consign it to the ignominious oblivion of the waste-paper basket.

Medical Extracts.

Chorea: Treatment by Chloral.

Mons. A. Joffroy, of the Hopital des Enfants-Malades, strongly recommends the systematic administration of chloral in the treatment of chorea. He administers this drug in sufficient doses to induce sleep, which is only broken twice in the twenty-four hours for the administration of food. This treatment has been methodically continued during fifteen days, a month, six weeks, or two months, up to complete recovery. The method succeeds in ameliorating the symptoms and in procuring a prolonged sleep. It is of importance to regulate carefully the dose of the medicine. Above the age of ten years, he ordinarily gives four grammes of chloral in three doses after meals: a gramme in the morning, a gramme at noon, and two grammes at night. For infants, from six to eight years, the quantity should not exceed three grammes. In all cases it is necessary to graduate the doses in such a way that the artificial sleep be always surely obtained a quarter of an hour after the administration of the dose, at least after the strongest dose, which is given at night. This mode of treatment should be continued with regularity up to the time when the choreic jactitation has been completely suppressed, and when the cure is complete. The chloral is given to the children in combination with currant jelly, and is prepared as follows: A concentrated aqueous solution of pure chloral (4 grammes to 1 of water) is combined with currant jelly, the mixture containing 1 gramme of the drug in each dessert-spoonful. The little patients take this preparation very easily in finishing their meals. In the majority of cases this treatment is found to be efficacious and sufficient. —*Le Progrès Médical*, 13th June, 1885.

Some Indications for Antipyrine.

Mr. G. Daremberg communicates to the Academy of Medicine a paper on "Some Indications for Antipyrine, especially in the Pyrexia of Tuberculosis."

He gives the following rule for its administration: To

give the first dose of one gramme of antipyrine before the commencement of the fever—that is to say, before the thermometer reaches 37°6; then to take another gramme every time that the thermometer has risen more than three tenths in one hour. If, however, the thermometer has risen only two tenths in an hour, it is necessary to give a dose if the patient ought to take a meal. It is right to allow an interval of one hour between a dose of the medicine and a meal; otherwise the digestion is damaged.

The drug may be continued for a long time in doses of 4 to 6 grammes daily with no disadvantage, in doses of 1 gramme at such times as the thermometer indicates, and principally one hour before meals.—*Bulletin de l'Académie de Médicine*, No. 21, 1885.

Thalline.

A derivative of quinoline, discovered by Dr. v. Jaksch, de Vienna, has a more agreeable action than kairine, and is more active than antipyrine. As a single dose, 4, 8, 12 grains were given. Thalline has the advantages over antipyrine of smaller dose, a less disagreeable taste and smell, and of rarely producing vomiting. Antipyrine has, on the contrary, the advantages over thalline of much longer duration of action, the absence of shivering, slowness of pulse in proportion to fall of temperature, and a more favourable action on the joints in acute articular rheumatism.—*Le Progrès Médicale*, May 16th, 1885.

M. Jaccoud gives his experience on the action of thalline, comprising a summary of the results of 43 administrations in 11 patients—24 administrations to cases of typhoid, 17 to cases of febrile tuberculosis, once to a case of pneumonia, and once to a case of erysipelas of face—and he comes to the following conclusion: Thalline is an antipyretic which surpasses all other antithermic agents. By the administration of 5 or 10 centigrammes every hour, one can maintain a permanent apyrexial condition in febrile cases. It is certain that in thalline we have the means of suppressing a febrile temperature for as long a time as we wish.—*Gazette des Hôpitaux*, June 25th, 1885.

Contribution to the Pathology of Thomsen's Disease.

Professor Bernhardt, writing to the *Centralblatt für Nervenheilkunde* (No. 6, 1885), says: "The two following cases of Thomsen's disease are those of a youth 16½ years of age, and of his sister, a girl aged 18. Both patients say that the disease

began when they were 4 or 5 years of age, and in the inferior extremities. In the case of the brother it has spread to other muscles, which have been attacked to the same extent as those of the legs, but in that of his sister the superior extremities have retained fairly normal power of movement. After a night's rest she does not feel stiff, and can leave her bed without any difficulty; but when she moves about much, she experiences the characteristic symptoms of the disease. If she gets up after sitting for some time, although she can rise from the chair quite well, as soon as she is on her feet she becomes stiff, and would fall, if touched ever so lightly; the first few steps she takes are stiff and awkward, after a few paces she walks better. By paying attention to her movements, and by doing her utmost to control the stiffness of the muscles by an effort of will, she succeeds in partially overcoming the difficulty of locomotion. All her other muscles are well developed.

"Her brother, a strongly-built young man, with athletic development of the muscles of arms and legs, exhibits the typical symptoms of the disease. The father and mother of these patients were blood relatives (cousins), also the grandparents. An aunt on the father's side was similarly affected. A sister of this aunt has married her cousin, and both the children of this marriage, a son and a daughter, have the disease. The son has married his cousin, and their child, a boy of 4 to 5 years of age, is showing the first symptoms of it."

Clinical and Pathological Observations on Thomsen's Disease.

Professor Erb, of Heidelberg (*Neur. Centralblatt*, No. 13, 1885), says: "Clinical observation of the motor nervous systems and muscles of three brothers, aged about 14 or 15 years, who were affected with this disease, have shown that we have in reality to do with an abnormality in the form of the contraction of the muscles, and the striking indolence (prolonged latent period?) and the continuance of the contraction are characteristic. This 'myotonic contraction' can be overcome by *direct* action on the muscles (mechanical, faradic, or galvanic irritation); through the nervous system, on the other hand, only when a series of rapidly accumulating irritants, such as voluntary action, secondary faradic currents, or labile galvanic current, act on the nerves." The sum total of these changes in electric excitability, which in a characteristic manner differentiate them from the reaction of degeneration, of tetany, of muscular hypertrophy, &c., Erb

designates by the term "myotonic electric reaction." The examination of a piece of muscle excised from the biceps, showed considerable hypertrophy was present. The diameter of the muscular fibre varied from 24 to 180 μ (normal 25 to 65 μ). More than 50 per cent. of the fibres were from 80 to 140 μ in breadth, whilst only 2 per cent. were under 40 μ, and 8 per cent. were over 140 μ. On measuring, for purposes of comparison, the biceps of a patient in good condition, who had died of an acute disease, the extreme limits of breadth were 12 and 80 μ, 62 per cent. between 20 and 60 μ, 7.5 per cent. under 20 μ, and no fibres above 80 μ. The fibres are of more rounded form, the angles being rounded off, and they are not pressed together in polygonal forms, as in the case of normal muscle. Erb also found that the nuclei of the sarcolemma were much increased in number, viz. 65, as compared with 18. The tranverse striae were very fine, often somewhat indistinct. At the end of his communication Erb expressly warns us against attaching too much value, at any rate prematurely, to the above abnormalities as supporting a theory of a myopathic origin of the disease.—*Deutsche Mediz.-Zeitung*, September 7th, 1885.

Fatal Poisoning by Iodoform.

Dr. Schwarz relates a case in which Iodoform was used after a vaginal and perineal operation, in a woman who had previously shown signs of psychical disturbance, small strips of iodoformed gauze being placed in the vagina, and the powdered drug dusted on the wound, three or four grammes of the drug in all being used.

Sixty hours after the operation the woman refused food, drink, and medicine, because she thought that she would be poisoned; she then had an attack of acute mania, and hallucination followed this. Some hours after, all the iodoform still remaining on the wound was carefully removed, and she was kept under the influence of morphia and chloroform, with ice bladders to the head and neck. Her face was noted as being much flushed, the eyes prominent and glittering, the mouth and tongue dry and furred. On awaking from the narcosis the symptoms of mania returned, and she refused nourishment. The temperature rose, pulse strong, pupils contracted, thumbs strongly flexed on the palms, the neck stiff, and trismus ensued. On the 6th day after the operation the patient died. The post-mortem examination showed extensive disease of the left kidney, with calculi in the pelvis, and the left ureter was blocked. Right kidney fairly normal. Nothing peculiar about the wound. In the cerebrum, where

the cortex and medulla are in contact, the former showed several reddish yellow spots, each of which was several millimetres in size.

Dr. Schwarz comes to the conclusion, from a study of the above case, that we ought to be very careful in using iodoform in old people, and especially where there is any predisposition to brain or kidney affection.

In connection with the case, the excretion of Iodine by the kidneys was noted by Dr. Harnack, and he found that on the first day after the toxic symptoms made their appearance, the urine removed by catheter contained 0·52 gramme of iodine per litre, of which amount 0·11 gramme was in the metallic form, the remainder in combination. The urine passed that day, after the iodoform had been removed from the wound, contained almost no iodine. The liver was quite free from iodine. The traces were found in the cerebrum, and the cerebellum contained one part of iodine in 5,000 parts of dried brain substance, which small amount, Dr. H. considers, may have a causal relationship to the psychical disturbances observed in iodoform poisoning.

In another case, which ended in recovery, Dr. H. found that the urine passed soon after the commencement of the nervous symptoms contained 0·23 gramme of iodine per litre, of which 0·175 gramme was in the form of the metal.—*Deutsche Mediz.-Zeitung*, August 13th, 1885.

Lupus and Tuberculosis.

Dr. E. Schmiegelow, in discussing this subject, cites the following results of experiments by:

1. R. Koch, who found tubercle bacilli in lupous tissue, and produced generalized tuberculosis by inoculation of this tissue:

2. Pagentecher and Pfeiffer, who found the bacilli in the lupous nodules of conjunctivitis. Inoculation was performed into the anterior chamber of rabbits' eyes; in five or six weeks typical tuberculosis of the iris and bacilli found in excised pieces of it:

3. Cornel and Leloir, who produced generalised tuberculosis by inoculating lupous tissue:

4. Dontrelepont, bacilli in connection with lupus, in 25 cases: as going far to settle the dispute as to the tubercular nature of lupus.

Schmiegelow considers that clinically nasal lupous polypi bear the same relation to lupous ulceration of the nose, as lupous granulations of the larynx and trachea bear to the tubercular ulcerations which are produced in these organs.

A practical point appears to be that the bacilli are few and far between in the lupous tissue, Koch having examined in one case 27, and in another 43 sections, before one was found.

Treatment of nasal lupus consisted of removal of the nodules by the sharp spoon, followed by galvano-cautery and solid nitrate of silver.—*Revue Mensuelle de laryngologie, &c.*, September, 1885.

Injection of Japanese (India) Ink in the Preparation of Histological Specimens.

In anatomy and histology the injection of staining fluids into the blood and lymphatic vessels is indispensable for the investigation of their arrangement, distribution, and anastomoses. This useful process was originally practised by Berengarins Carpensis of Pavia and Bologna (1502-1527). He filled the vessels with a coloured or non-coloured fluid by blowing. After him the process was taken up by many others, such as R. Vieussens of Montpelliér (1641-1715), who used mercury; Joh. Swammerdan of Holland (1627-1680), who used melted wax, and Petrus Simon Rouhault, who used a kind of gelatine; but the object of their work was limited to anatomical purposes only. It was not until the present century that this art has been employed in histological work, for introductions of which we are indebted to Jos. Gerlach of Erlangen, who injected carmine into the vessels for microscopical investigation. From his time, the art has progressed materially. We have now many methods and many fluids for the same purpose; but I think the preparation of these fluids is rather complex, and some of them easily spoil by modifying the elements of the texture, or by infiltrating the tissues around the vessels. Some of them lose their colour by being kept any length of time. In 1879 I suggested that Japanese ink might be used for the same object, and I have had good results with it. I have made many beautiful preparations with it. The vessels of the brain, of the spinal cord, of the striated muscle, of the papillæ of the tongue, of the mucous membrane of the intestine, of the mucous membrane of the bladder, of the kidney, of the cavernous body of the penis, of the skin of the tip of the finger, of the palpebral conjunctiva, of the choroid of the iris. I have also tried it in the lymphatic vessels of the small intestine, of the retina, and of various other parts. It penetrates into the finest channel in every instance. In the small intestine it shows beautifully the lymphatic meshes of the submucous tissue, the lymphatic vessels of Lieberkühn's tube, the lymphatic cavity of the villi, and the lymphatic

meshes of Peyer's patches. In the retina, it shows a network of black lines in the plane section, elliptical black spots in the transverse section, and slender spindle lines in the vertical section.

Ordinary Chinese or Japanese ink is sufficient. There is no danger of its spoiling in the warm season, or of its changing colour by being kept a long time. To prepare it, rub it slowly on the ink stone (*sudzuri ishi*) until it does not blot, or infiltrate into the surrounding surface when dropped upon Chinese paper. It may then be injected in the ordinary way with a syringe.—Dr. K. TAGUCHI (University of Tōkiō), in *Transactions of the Sei-i-Kwai*, Japan, May, 1885.

Dr. Alexander on Excision of the Hip.

Dr. Alexander summarises his experience in the treatment of hip disease as follows:

1. That hip disease should in the earlier stages be treated by that absolute and perfect rest of the joint that we now appreciate so well and know so much better—thanks to Mr. H. O. Thomas—how to apply, without at the same time producing general debility of the system through the restraint and confinement necessary in former times to secure sufficient rest to the joint.

2. That this treatment, thoroughly and persistently carried out for a long period, will cure a very large percentage of cases of joint disease.

3. That unfortunately this treatment *cannot* or *is not* properly or persistently carried out amongst the poor, with whom a persistent attempt to carry it out after a certain stage of the disease has been reached only leads in many cases to a useless limb after many years, and probably in a majority to death, either during the process of cure or soon after, from the exhausting effects of the local disease, and not, as some erroneously think, from an inherited constitutional debility.

4. That many of these patients could be saved by excising the joint when a decided second stage of hip disease has been reached, and that excision is most safely and advantageously performed by severing the femur above the trochanters, clearing out the acetabulum, and maintaining the opposing bones so far apart that their surfaces can resume a healthy condition and the aperture between become filled up with fibrous tissue. By this means an excellent false joint is formed, or if the adhesions become too firm, a good stiff joint.

5. That the advent of the stage of the disease suitable for excision is indicated by the repeated formations of abscesses

and sinuses round the joint. Then excision, as described, seems to me to offer better results, both locally and generally, than rest and waiting to see what will turn up.

6. That when the supra-trochanteric mode of excision cannot be performed with any chance of success, on account of the extensive nature of the hip disease, the alternative treatment comprises either continued expectancy or amputation, according to the age and condition of the patient.

7. That it is, however, a great mistake to imagine that all softened bone or infiltrated tissue should be cleared away by the operator. All he has got to do is to clear a space where the operations of Nature, in dealing with diseased or disabled tissues, can be carried out as easily and expeditiously as possible. The operator should remove all manifestly dead tissue; but bone and tissue that the surgeon would be inclined to sacrifice as doubtful should be left alone, as these will, under the same skilful hands of Nature, be restored to health, or extruded harmlessly if only a passage for their extrusion be maintained.—*Liverpool Med.-Chirurgical Journal*, No. 9, July, 1885.

What is the proper time to take Medicines?

The question whether a prescribed medicine should be taken before or after a meal is often put to the physician, and occasionally requires some special consideration. The medicines which act as local irritants, such as the salts of copper, iron, zinc, and arsenic, in large doses, are to be taken after a meal when the stomach is full, while small doses of medicines acting on the gastric terminations of the vagus ought to be taken before a meal. In some instances we have to consider chemical changes. Oxide and nitrate of silver, if intended to act locally on the gastric mucous membrane, must likewise be exhibited when the stomach is empty. It is not generally known, or at least observed, that iodine and its salts are to be administered on an empty stomach, as the presence of starch and acids, modifying or decomposing the preparations of iodine, would reduce or prevent their effect. The acids intended to affect the gastric juices are to be taken before a meal, in order to provoke an ample secretion of the gastric glands. If alkalies are to modify the gastric juices, they must be given during the meal; but if their absorption into the blood is desired, they ought to be ingested on an empty stomach, in order not to hinder the process of chymification by weakening the acids. Metallic salts, especially corrosive sublimate, likewise tannic acid, alcohol, and other drugs,

modify or destroy the digestive power of pepsine, and are hence to be exhibited solely before meals. Small quantities of alcohol, as contained in the ordinary and medicinal wines, do not injuriously affect pepsine like the liquors rich in alcohol. Iron, phosphates, cod-liver oil, and similar medicines, may be taken during meal-time (*Bull. Gén. de Thérap.*).—*Therapeutic Gazette* (Detroit, U.S.A.), June 15, 1885.

The Incompatibility of Chloral Hydrate with Potassium Bromide and Alcohol.

The decomposing of a prescription containing potassium bromide, chloral hydrate, tincture of opium and camphor, and syrup of ginger, led Professor F. M. Markoe (*Boston Medical and Surgical Journal*, July 23, 1885), to study the incompatibility of chloral. The various experiments which he made led him to the practical deduction that alcoholic preparations of all forms should not be prescribed with chloral hydrate, especially not with bromides of potassium and sodium, because if the solutions used are at all concentrated the chloral will separate as an alcoholate, float on the surface, and great risk will be incurred of giving a large overdose, the patient having received no caution as to shaking the contents of the bottle before taking the dose.—*Therapeutic Gazette*, August 15, 1885.

The External Treatment of Night-sweats.

Nicolai (*Gazette Médicale de Paris*, June 6, 1885) has obtained very good results in the case of night-sweats of phthisical patients, and others, by the employment of 8 grammes of chloral dissolved in two tumblerfuls of a mixture of equal parts of brandy and water. Every evening before going to sleep the patients are washed over with a sponge soaked with this solution, and if that does not serve to control the sweating, the shirt in which the patient sleeps is soaked with the same solution and then dried. The effect of this treatment is claimed to be especially satisfactory in cases of children, not suffering from phthisis, in whom night-sweats are present. Sometimes four rubbings with this solution are sufficient to entirely arrest the night-sweats for several weeks. The tincture of belladonna is also highly recommended by Radakow for the suppression of the night-sweats of phthisis by external friction, with a mixture of 4 grammes of the tincture of belladonna with 30 grammes of water, the friction to be made about two hours before the ordinary onset of the sweating. The fluid is to be poured into the palm of the hand, and then rubbed over the entire

body, with the exception of the head and the extremities, and the manipulation may be continued until the skin becomes quite moist. This treatment has been employed by Radakow in fifty cases, and he claims that it has not failed in a single instance, although sometimes localized sweatings appeared on the parts which had not been bathed with the tincture of belladonna.—*Therapeutic Gazette*, August 15, 1885.

On the Influence of Agaricine on Perspiration.

Experiments instituted by Dr. Pibram, of Prague, with agaricine, on persons with an abundant or suppressed perspiration, extend our knowledge as to the action of this drug. His conclusions, as detailed in the *Zeitschrift für Therapie* of March 15, 1885, are as follows:

1. Agaricine is a scarcely ever failing remedy for the suppression of excessive perspiration, especially in phthisical patients.
2. In the physiological state agaricine sustains perspiration at a certain constant level.
3. In cases of suppression of copious perspiration by agaricine, the cutaneous and pulmonary discharges remain essentially unaltered.
4. The urinary organs discharging the surplus of liquid, and the diminished thirst decreasing ingestion of liquids, the hydrostatic equilibrium is thus re-established.
5. Moderate perspiration yields to a single $\frac{1}{6}$-grain dose, while profuse sweating requires repeated, equal, or increasing doses for its suppression.
6. The physiological action of the drug manifests itself five hours after its exhibition.
7. There are no undesirable after-effects attending its use.
8. Agaricine leads to improvement of the subjective state of phthisical patients by eliminating a constant strain of their flagging strength, without, of course, altering the pathological tissue-changes themselves.—*Therapeutic Gazette*, May 15, 1885.

Neuropathic Sneezing.

Dr. Féré describes a case, which was under the care of Professor Charcot, of a girl 16 years of age, who had ancestors who had shown neuropathic tendencies, and who herself showed all the symptoms of hysteria. The sneezes followed each other very quickly, at the rate of 32 to 40 per minute, and in three weeks she sneezed 16,195 times. No nasal secretion at all was observed to succeed the attacks, and it was regarded as purely hysterical.—*Revue Mensuelle de Laryngologie, &c.*, August 1st, 1885.